This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

HC 4HD1 L

Digitized by Google

BOSTON
MEDICAL LIBRARY
8 THE FENWAY

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

TRANSACTIONS

OF THE

MEDICAL SOCIETY

OF THE

STATE OF CALIFORNIA,

DURING THE YEARS 1877 AND 1878.

SACRAMENTO:
H. S. CROCKER & CO., PRINTERS AND STATIONERS.
1878.

Digitized by Google

ON MEDI
DEC13
LIBRARY

CATALOGUED
DEC 13 1918

Digitized by Google

REPORT OF COMMITTEE ON PUBLICATION.

THE Committee on Publication, in presenting the Eighth Volume of the Transactions of the Medical Society of the State of California to its members, have to express their regret at the unavoidable delay in its publication, consequent upon the difficulty experienced in obtaining reports in season from the Chairmen of the different Committees. From this cause, some reports of Committees which usually add much interest to the volume, are necessarily omitted. The Committee have, to the best of their ability, utilized the material on hand, without invidious distinction; and, although believing that some of the papers presented might find a more fitting place in the columns of a local medical journal, considered it their duty to those who had added their mite to the treasury of medical knowledge, to give them due acknowledgment in the pages presented.

In accordance with a resolution passed at the last session of the society, the amendments to the Constitution, and the different resolutions adopted from year to year for its government, have been formulated and incorporated in the present volume.

In typography and other respects we believe that this volume will compare favorably with those that have preceded it; and without further apology or remark, ask its acceptance by the members of the society.

GERRARD G. TYRRELL, Chairman,
F. W. HATCH,
T. A. SNIDER,
H. W. NELSON,
W. R. CLUNESS,
Committee on Publication.

SACRAMENTO, July, 1878.

Digitized by Google

CONTENTS.

Minutes of the Eighth Annual Meeting of the Medical Society of the State of California, held in San Jose on April 17th and 18th, 1878. 1- 15
Annual Address: by Washington Ayer, M. D., President..... 16- 25
Recent Advances in Surgery: by L. C. Lane, M. D., of San Francisco 26- 39
Report on Medical Education: by H. S. Orme, M. D., of Los Angeles 40- 51
Supplemental Report on Medical Education: by J. Bradford Cox, M. D., of San Jose..... 52- 60
Report on Public Hygiene and State Medicine: by F. W. Hatch, M. D., of Sacramento..... 61-107
Report of Committee on Ophthalmology: by Geo. H. Powers, M. D., of San Francisco..... 108-113
Fibroid Tumor of the Uterus: by John Scott, M. D., of San Francisco 114-122
Excisional Surgery of the Ankle Joint: by James Murphy, M. D., of San Francisco..... 123-128
Medullary Sarcoma of Knee Joint: by E. H. Woolsey, M. D., of Oakland..... 129-135
Operation for Cleft of the Hard-Palate: by E. H. Woolsey, M. D., of Oakland..... 136-139
The Value of the Ophthalmoscope to the General Practitioner: by Sara E. Brown, M. D., of San Jose..... 140-156
Embryology: by C. Annette Buckel, M. D., of Oakland 157-166
On Mental Influences: by G. W. Davis, M. D., of Chico..... 167-175
Hygienic Education for the People: by M. M. Chipman, M. D., of San Jose..... 176-179
Pigment Induration of the Lungs: by Henry Worthington, M. D., of Los Angeles..... 180-189
Treatment of Chronic Corporeal Endometritis: by Stillman Holmes, M. D., of Santa Cruz..... 190-198
Mushroom Poisoning: by J. A. Dawson, M. D., of Chico..... 199-201
Three Cases of Paracentesis Thoracis: by W. S. Thorne, M. D., and Robt. Caldwell, M. D., of San Jose..... 202-208
On Feticide: by H. Gibbons, Sr., M. D., of San Francisco..... 209-225
Remarks on the Theory and Treatment of Diphtheria: by J. T. Wells, M. D., of Bakersfield 226-231
Doctors and Law-Makers: by Q. C. Smith, M. D., of Cloverdale..... 232-237
Report of Committee on Necrology: by Benj. R. Swan, of San Francisco..... 238-240
Report of Treasurer of State Medical Society, I. E. Oatman, M. D., of Sacramento..... 241
Report of Treasurer of State Board of Examiners, C. M. Bates, M. D., of San Francisco..... 242
Constitution and By-Laws..... 243-252
Amendments to Constitution..... 253-254
Resolutions Relating to the Government of the Society..... 255-258
Standing Committees of the State Medical Society for 1878-9..... 259-260
Catalogue of Officers and Members of the State Medical Society..... 261-275

Digitized by Google

ON MEDI
DEC 13 19
LIBRARY

EIGHTH ANNUAL MEETING

OF THE

MEDICAL SOCIETY

OF THE

STATE OF CALIFORNIA.

THE Eighth Annual Session of the California State Medical Society was convened at Music Hall, San Jose, April 17th, 1878, at 11:45 A. M., President Washington Ayer in the chair.

The society having been called to order, Dr. A. W. Saxe, Chairman of the Committee of Arrangements, read an address of welcome to the members and delegates, as follows:

MR. PRESIDENT, LADIES AND GENTLEMEN OF THE CALIFORNIA STATE MEDICAL SOCIETY: The Committee of Arrangements for the Eighth Annual Meeting of your society take pleasure in bidding you a cordial welcome to the City of San Jose, and invite your attention to the various important matters of business which will come before you, and which will claim your most earnest and well considered action.

The hall chosen by your committee for the uses of the convention is every way convenient, and sufficiently spacious for all your needs. The invitations issued by your

Digitized by Google

committee to all the members of the State Medical Society, have elicited numerous responses, and give promise of an exceedingly interesting session, which we hope may be full of profit to the profession and to the community.

One of the most important uses of the convention is the opportunity afforded for the formation of mutual aquaintance, and renewing of old ones among the members of the society; and it is earnestly hoped that harmony, good will, and fraternity may characterize its deliberations.

To those members of the society who occupy positions of distinction well earned by arduous labors in early life, who shed glory upon the profession, we bid you welcome.

To those who, by careful research in the dissecting room, and by the bedside, by microscopic and spectroscopic examinations and chemical analyses have added much to our knowledge of the minute structures and functions of the human body, and given to pathology those wonderfully accurate means of diagnosis, we bid you a double welcome.

To the rank and file of the profession who are bearing the burden and heat of the day, toiling, at the call of distress, through bogs and ferns, over mountain trails, on snowshoes and on horseback, regardless of the lurking malaria, torrid heat or arctic cold, and inadequate pecuniary recompense, only caring that human life is in jeopardy, and that human suffering is to be alleviated—you are thrice welcome; and being all members of one body, each should enjoy his due proportion of the most excellent glory of the medical profession—one of the most palpable manifestations of divine beneficence, through human agency, that has survived the fall.

Your committee earnestly hope that the present session may be characterized by great profit, cordial fraternity, and enjoyment.

On motion, the address was referred to the Committee on Publication.

The committee reported the following members present:

Digitized by Google

G. H. Powers, San Francisco; R. Beverly Cole, San Francisco; G. G. Tyrrell, Sacramento; W. Ayer, San Francisco; W. T. Wythe, San Francisco; Benj. Cory, San Jose; W. S. Thorne, San Jose; A. W. Saxe, Santa Clara; P. M. Lusson, San Jose; J. B. Cox, San Jose; C. K. Farley, Gilroy; Q. C. Smith, Cloverdale; S. Holmes, Santa Cruz; A. Fine, Watsonville; F. W. Hatch, Jr., Sacramento; M. M. Chipman, San Francisco; H. Gibbons, San Francisco; Mrs. C. B. Brown, San Francisco; C. A. Kirkpatrick, Redwood City; Benj. D. Dean, San Francisco; W. A. Grover, San Francisco; S. J. S. Rogers, Marysville; H. J. Crumpton, Lakeport; J. M. Briceland, Shasta; J. F. Montgomery, Sacramento; N. Williams, Richland; Thos. Ross, Yolo; G. W. Davis, Chico; H. S. Orme, Los Angeles; H. Neal, Hollister; Mrs. E. P. Stone, Oakland; Mrs. E. A. Follansbee, San Francisco; Mrs. E. A. V. Brownell, San Francisco.

Delegates from Santa Clara Medical Society—Drs. R. Caldwell, T. J. Jenkins, J. W. Brown, M. S. McMahon, H. D. Robertson.

Visitors—J. H. Carothers, Martinez; A. H. Cochrane, John McMahon, N. J. Cory, Thos. Kelly, P. N. Snyder, C. N. Worthington, J. D. Scott, Jared Turner, J. T. Malone, J. S. Potts, Rev. Dr. Bucknell, San Jose; H. N. Rucker, Merced; A. Kesseler, Volcano.

The Board of Censors reported the following named gentlemen eligible for membership:

NAME.	SCHOOL.	DATE.
A. Kesseler, Volcano	University of New York	1876
John B. McMahon	Medical College, Ohio	1878
A. P. Whittell	University of California	1873
M. S. McMahon	University of Iowa	1858
Thos. Kelly	Rush Medical College	1871
Robt. Caldwell	Toland Medical College	1869
H. D. Robertson	Medical College of Pacific	1876
T. J. Jenkins	University of Tennessee	1877
A. H. Cochrane	Albany Medical College	1857

The report was received, and on motion adopted, and the Secretary ordered to cast the vote of the society for those named.

Digitized by Google

The President then delivered the annual address.

The Secretary read a communication from Dr. Cox, inviting members to visit City and County Hospital.

On motion of Dr. R. Beverly Cole, the invitation was accepted with the thanks of the society.

The resignation of Dr. W. H. Mays was read and accepted.

A communication from Dr. E. J. Martin was also read and referred to the Board of Censors.

An invitation to the members to visit the San Jose Library was received, and thanks of the society returned to the Librarian.

A communication from the Secretary of the Alameda Medical Society was received, and referred to the Committee on Necrology.

The Secretary read a petition from Dr. J. Hastings.

Dr. Powers moved that the petition be referred to the Board of Censors, with authority to publish for one week the petition and the reasons therein asked for.

Dr. Gibbons moved an amendment, that the whole matter be referred to the Board of Censors.

The amendment was carried, and the subject matter so referred.

The Secretary also presented the petitions of Drs. Mintie and Czapkay, which were also referred to the Board of Censors.

The minutes of the session having been read and approved, on motion, the society adjourned until 2 P. M.

AFTERNOON SESSION, APRIL 17TH, 1878.

The society was called to order by the President, at 2 P. M.

The President announced that he had appointed Drs. Saxe and Cox members of the Board of Censors, to fill the vacancies occasioned by the deaths of Drs. Chamberlain and Van Wyck.

On motion, the society confirmed the appointments made by the President.

Digitized by Google

The Board of Censors reported the following named, who were elected members of the society:

NAME.	SCHOOL.	DATE.
Chloe Annette Buckel	Women's Med. Col. of Pennsylvania	1858
B. F. Clarke	University of Pacific	1877

Dr. Wells read a paper on the Treatment and Causes of Diphtheria, which was referred to the Committee on Publication.

Dr. Powers presented the report of the Committee on Ophthalmology. Also referred to the Committee on Publication.

The Secretary read an invitation to the society to visit the State Normal School, which was accepted, and the thanks of the society returned therefor.

Dr. Gibbons offered the following resolution:

Resolved, That the Publication Committee be requested to insert in the proceedings, in a collective form, all the changes in the Constitution, and the resolutions relating to the government of the society, which have been adopted from time to time.

It was so ordered.

Dr. H. Gibbons presented the report of Dr. W. P. Gibbons on Indigenous Botany.

On motion of Dr. Cole, the paper was ordered returned to Dr. Gibbons, with the request that he complete it and return it to the Committee on Publication.

Dr. H. S. Orme read the report of the Committee on Medical Education.

Referred to the Committee on Publication.

On motion of Dr. Thorne, the President was authorized to appoint a committee of three, to whom shall be referred the matter of improved legislation touching the compensation of medical experts in California Courts.

Dr. Montgomery moved the adoption of proposed amendment to Section 1, Article III, of the Constitution.

Dr. Gibbons moved the amendment be laid on the table. Carried.

Digitized by Google

Dr. Dean moved the adoption of the proposed amendment to Article II, Section 4.

Adopted.

The proposed amendment to Article II, Section 6, was also adopted by the society.

The question being on the Robertson amendment, proposed at the last session, to the Constitution, as follows:

Any person having a certificate from the Board of Examiners of this society shall be eligible to membership of this society.

Dr. Powers moved to lay the subject on the table.

The motion was lost.

Dr. Gibbons moved to amend the amendment, as follows:

"Candidates for membership who present certificates from the Board of Examiners, founded on diplomas issued by regular medical schools, may be admitted by the Censors, should no objection to their admission be presented to the Censors."

The President ruled that the amendment, if offered, must lie over until next session.

On motion, the subject was made the special order for 8 o'clock P. M.

Dr. Oatman presented his report as Treasurer, which was referred to the following committee: Drs. Kirkpatrick, Montgomery, and Ross.

The President appointed Drs. Thorne, Cole, and Simmons, Committee on Legislation.

The minutes having been read and approved, on motion the society adjourned until 8 o'clock P. M.

EVENING SESSION, APRIL 17TH, 1878.

The society was called to order by the President.

The special order being on the amendment proposed to the Constitution at the last session, by Dr. E. B. Robertson, the Board of Censors, in connection therewith, reported that

Digitized by Google

they had examined the paper presented by Dr. Kirkpatrick, and addressed to the State Board of Examiners, and that the Board of Censors have no jurisdiction in the matter, but do not consider it a proper paper to be presented to the society in open meeting.

On motion, the report was received and adopted.

After some discussion on the subject matter of the amendment, Dr. Gibbons moved the indefinite postponement of the subject.

Carried.

A communication was received from Dr. Swan, presenting the report of the Committee on Necrology.

The report was read and referred to the Committee on Publication.

The committee to whom was referred the report of the Treasurer, reported the accounts correct.

On motion, the report was adopted.

The financial report of the Board of Examiners was read and referred to a committee, consisting of Drs. Kirkpatrick, Todd, and Smith.

The Secretary read the annual report of the State Board of Examiners.

On motion, the report was received.

Dr. Stout moved that the thanks of the society be tendered the Board of Examiners.

Carried.

Dr. Montgomery gave a verbal report relating to the action of the Legislative Committee.

On motion, the committee was discharged, with the thanks of the society.

Dr. Stout moved the appointment of a committee to whom shall be referred the law in relation to the practice of medicine, and who shall report at the next session such changes and amendments as may be deemed necessary.

It was so ordered.

The President appointed Drs. Stout, Oatman, and Montgomery as such committee.

Dr. Stout presented the report of the committee to whom

Digitized by Google

was referred the project of founding a hall for the society, which was read.

The report was accepted, and ordered published in the transactions.

Dr. F. W. Hatch, Chairman, read the report of the Committee on Public Hygiene and State Medicine, which was referred to the Publication Committee.

The committee to nominate officers for the ensuing year was announced, as follows:

H. Gibbons, San Francisco County; E. H. Woolsey, Alameda County; J. T. Wells, Kern County; A. B. Mehring, Tulare County; G. W. Davis, Butte County; G. L. Simmons, Sacramento County; H. S. Orme, Los Angeles County; M. S. McMahon, Santa Clara County; C. A. Kirkpatrick, San Mateo County; J. M. Briceland, Shasta County; H. J. Crumpton, Lake County; Thos. Ross, Yolo County; H. Neal, San Benito County; A. Kesseler, Amador County; S. J. S. Rogers, Yuba County; S. Holmes, Santa Cruz County; Q. C. Smith, Sonoma County; J. K. Reid, San Joaquin County.

On motion of Dr. A. B. Stout, it was—

Resolved, That the President appoint a committee of three to prepare a suitable expression of the sympathy of this society for ex-Surgeon General W. A. Hammond, and present to the Honorable Senate of the United States the respectful petition of this society, soliciting that the said ex-Surgeon General Hammond may be restored to his former prestige and honor in the estimation of the President of the United States.

The minutes of the session having been read and approved, the society adjourned.

MORNING SESSION, APRIL 18TH, 1878.

The society was called to order at 11 o'clock A. M, President Ayer in the chair.

The Board of Censors reported favorably on Dr. H. H.

Digitized by Google

Briggs, Chicago Medical College, 1874, who was elected to membership.

The Board of Censors reported in relation to the cases of Messrs. Hastings, Mintie, and Czapkay, "that we have no jurisdiction in these several cases without further action of the Board of Examiners, and recommend that these several cases be referred to the new Board of Censors for further action, and report at the next meeting of the society."

The report was adopted.

The Board of Censors reported in relation to the case of Dr. M. Baker of Visalia, "that no charges in a tangible form have been made, nor any evidence substantiating the reflections cast upon him, presented to the Board. They therefore recommend that all further consideration of the case be indefinitely postponed."

The report was adopted.

Dr. O. Harvey presented the following resolution:

Resolved, That the recommendation of the last Board of Censors in the case of Dr. H. H. Warburton be now adopted, action having failed to be taken at the last meeting.

Adopted.

Dr. Thorne presented a resolution in relation to arrears of dues.

The President decided the resolution unconstitutional.

On motion of Dr. Cole, the Secretary was directed to report the names of delinquent members annually to the Board of Censors.

Dr. J. Scott moved that the society confirm the action of the Board of Examiners in relation to the cases of Messrs. Hastings, Mintie, and Czapkay, which was carried.

The committee to which was referred the accounts of the Board of Examiners, reported that they had been found correct.

The report was adopted and committee discharged.

Dr. Cox presented a paper by Dr. Worthington, on

Digitized by Google

"Pigment Induration of Lungs, Associated with Heart Disease."

Referred to Committee on Publication.

Dr. L. C. Lane, Chairman, read the report of the Committee on Surgery.

Referred to Committee on Publication, and thanks of the society returned to Dr. Lane.

The Secretary read the following report of the Nominating Committee:

TO THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA: Your committee, to whom was intrusted the nomination of the officers of the society for the ensuing year, report as follows:

President—H. S. Orme, of Los Angeles.

Vice Presidents—A. W. Saxe, of Santa Clara; J. M. Briceland, of Shasta; James Simpson, of San Francisco; G. L. Simmons, of Sacramento.

Assistant Secretaries—F. W. Hatch, Jr., of Sacramento; Thomas Ross, of Yolo.

Treasurer—I. E. Oatman, of Sacramento.

Board of Censors—H. Gibbons, Sr., of San Francisco; Q. C. Smith, of Sonoma; B. D. Dean, of San Francisco; R. A. McLean, of San Francisco; W. A. Grover, of San Francisco; C. A. Kirkpatrick, of Redwood City.

State Board of Examiners—R. Beverly Cole, H. Gibbons, Jr., C. M. Bates, of San Francisco; H. P. Babcock, of Oakland; J. B. Cox, of San Jose; Luke Robinson, of Colusa; J. F. Montgomery, of Sacramento.

Alternates—G. A. Shurtleff, of Stockton; G. W. Davis, of Chico; S. Holmes, of Santa Cruz.

The next place of meeting, San Francisco.

All of which is respectfully submitted.

THOMAS ROSS, Secretary.

On motion, the report was adopted.

Dr. B. D. Dean declined the nomination as member of the Board of Censors.

Digitized by Google

The society then directed the Secretary to cast the vote of the society for the remaining names reported by the committee, who thereupon were declared by the President duly elected.

On motion of Dr. Blake, the Committee on Nominations were directed to present the name of some member to the society to fill the vacancy caused by the declination of Dr. Dean.

The Committee on Prize Essays reported that no essays had been received.

Dr. Wilder presented an interesting case of disease of the ear, resulting from injury, and showing results of operation.

Dr. Woolsey presented several pathological specimens, and papers relating thereto.

Papers were referred to Committee on Publication.

Drs. Slocum of Ohio, Johnson of Chicago, and McGrigin of Philadelphia, were invited to seats in the convention.

The Committee on Nominations presented the name of Dr. R. A. McLean, to fill vacancy in Board of Censors, who was, on motion, duly elected.

The Board of Censors reporting favorably, Dr. J. H. Carothers, Miami College, 1866, was elected to membership.

The report of the Committee on Mental Diseases was read by title and referred to Committtee on Publication.

The Committee on Publication presented the Proceedings of the Session of 1877 as their report, which was received and adopted.

Dr. Brigham presented a patient exhibiting the result of excision of scapula and head of humerus.

Dr. J. T. Burdick, University of Michigan, 1872, was elected to membership.

Society adjourned until 2 o'clock P. M.

AFTERNOON SESSION, APRIL 18TH.

Society called to order by the President at 2 P. M.

The President presented a Supplemental Report on Sur-

Digitized by Google

gery, from Dr. James Murphy, which was referred to Committee on Publication.

Bills for printing and rent of hall were referred to Finance Committee.

Board of Censors reported favorably for membership the names of:

NAME.	SCHOOL.	DATE.
Eliz. Grisselle, San Francisco	Western Reserve College	1855
Hiram Rucker, Merced	University of California	1870
W. A. Washington, Merced.	University of Virginia	1858
A. S. Hudson, Stockton	Albany Medical College	1846

—Who were unanimously elected.

Dr. G. W. Davis presented a paper on "Mental Influences," which was referred to Committee on Publication.

Dr. Davis then proceeded to read a paper, by Dr. J. A. Dawson, of Chico, reporting cases of mushroom poisoning, which was referred to Committee on Publication.

Dr. S. E. Brown read a paper on Removal of Calculi from the Ear.

Referred to Committee on Publication.

Board of Censors reported that they recommend that the name of Dr. E. J. Martin be dropped from the roll.

It was so directed.

Mrs. Dr. Buckel presented a paper on Development of Embryology.

Referred to Committee on Publication.

Drs. Thorne and Caldwell presented a paper on Paracentesis Thoracis.

Referred to Committee on Publication.

Dr. Cox presented Supplemental Report on Medical Education.

Referred to Committee on Publication.

No report presented from Committee on Diseases of Women and Children.

Dr. Q. C. Smith read a paper entitled "Doctors and Law Makers," which was referred to Committee on Publication.

Dr. Orme moved that the Secretary of the Board of Examiners be instructed to communicate with the local

Digitized by Google

medical societies, and urge that they prosecute violations of the medical law, and that they report progress from time to time to the Board of Examiners.

Carried.

Dr. Orme moved that the Permanent Secretary be authorized to have printed and distribute one thousand copies of the present Medical Law.

Adopted.

Dr. Woolsey moved that the Committee on Publication of Certificates procure the same without delay.

Adopted.

Dr. Cole read a report on Gynæcology, exhibited several instruments in connection therewith, and explained their use. He also presented the following supplementary reports: Case by Dr. Kirkpatrick, of Redwood; case by Dr. I. Revas, San Francisco; Endometritis, Dr. S. Holmes, of Santa Cruz; case by Dr. Chismore, of San Francisco.

Dr. Gibbons, Sr., offered the following amendment to the Constitution:

Resolved, That Section I, Article III of the Constitution be altered to read as follows: The officers of this society shall be a President, four Vice Presidents, one Secretary, two Assistant Secretaries, a Treasurer, and a Board of Censors of five members. These officers shall be nominated by a committee of one member from each county, on the morning of the second day of the meeting, and shall be elected by ballot. Each officer shall have his appointment for one year, and until another is elected to succeed him.

Laid over under the rules.

Reading of minutes dispensed with until this evening.

Dr. Woolsey moved that the resolution offered by Dr. Stout be reconsidered.

So ordered.

Moved that the whole subject matter be laid on the table.

Carried.

Meeting adjourned until 7:30 P. M.

Digitized by Google

EVENING SESSION, APRIL 18TH.

Society called to order by the President, at 7:30 P. M.

Minutes of morning and afternoon sessions were read and approved.

Dr. M. M. Chipman presented a paper entitled "Hygienic Education for the People," which was referred to Committee on Publication.

On motion of Dr. Woolsey, the dues of Assistant Secretaries were remitted.

Dr. Woolsey presented the following resolution:

Resolved, That the several local medical societies and Boards of Health throughout the State be requested to urge their respective city, county, and town authorities to establish ordinances or laws requiring all practitioners of medicine within the limits of their respective jurisdictions to report in writing to their respective Boards of Health all cases of the more dangerous epidemic diseases coming under their professional observation.

Adopted unanimously.

Dr. Gibbons read the paper of the evening on Feticide.

Referred to Committee on Publication.

Dr. Scott presented the following:

Resolved, That this society appeal to all ministers of the gospel throughout the State, and urge them to use their influence in all proper and available ways to discourage the inhuman, degrading, and extensively prevailing practice of feticide.

Adopted.

Dr. Gibbons returned his thanks to the lady members of the society for the presentation of a beautiful bouquet after his lecture.

On motion of Dr. Scott, the thanks of the society were tendered the President for his management of the business of the society.

Unanimously adopted.

Thanks of the society were tendered all retiring officers.

Digitized by Google

Also, to Permanent Secretary. Also, to Committee of Arrangements, and the profession of Santa Clara County.

The minutes were then read and approved.

The President appointed Drs. Cole and Wilder to conduct the President elect to the chair, when he was introduced by Dr. Ayer.

Dr. Orme returned his thanks in an appropriate manner.

The President then declared the Eighth Session closed.

GERRARD GEORGE TYRRELL,
Permanent Secretary.

[After the adjournment, the society was entertained at the Auzerais House, where a magnificent banquet was prepared under the auspices of the Santa Clara County Medical Society.]

Digitized by Google

ANNUAL ADDRESS

DELIVERED BEFORE THE

CALIFORNIA STATE MEDICAL SOCIETY.

BY WASHINGTON AYER, M. D.

LADIES AND GENTLEMEN OF THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA: Again we have assembled to deliberate upon the wisest plans to pursue in the practice of medicine, and discuss such measures as in our dispassionate judgment we believe will advance the interests of the profession and secure the greatest good to our fellow-men.

The physiological laws regulating and controlling the functions of organic life, we recognize as fixed and as immutable as the fiat which spake worlds into existence; and we are to expound these facts to the afflicted, and penetrate the *arcana* of thought and physiological action of animated nature, and disclose to others the hidden operations connected with the sciences of Zoology, Pathology, Therapeutics and Metaphysics. The study of Metaphysics in its application to medicine is too much neglected. The endosmotic and exosmotic action of thought upon the various elements and agencies of physical life present to the intelligent mind a most comprehensive field for investigation, and is strictly in accord with the old maxim—*mens sana in corpore sano.*

The various subjects which should interest the gentlemen of the profession especially, are all referred to their appropriate committees, and I will only invite your attention for a short time on this occasion to the "physician"—a very humble, self-sacrificing, integral part of the human

Digitized by Google

family. However familiar the term "physician" may be, it is well at times to hold the mirror of his life before the public, that his true character may be thrown back upon the slumbering memories of his past as well as the present deeds of valor and charity, and the world become aroused to a consciousness of his labors and his voluntary suffering. A long line of medical lights have come down to us from the earliest history of medicine, growing brighter, and diverging in their course, until all cognate sciences are becoming absorbed in medical learning, and the physician now stands prominent among the scientists of the world.

The days of Hippocrates, Damocrates, and Paracelsus, compared with the present, were like the first glimmering of the daylight which precedes the resplendent day.

They were hard students, and with care and solemnity opened the sealed book in which were discovered the wonderful mechanisms of man. They understood very well the anatomy of the body and the functions of many of the organs, but had a very erroneous idea of the circulation of the blood, which was left to the celebrated Dr. Wm. Harvey to discover, early in the sixteenth century, and in 1628 he made known the result of his researches, in a work entitled "Exercitationes de Motee Cordis et Sanguinis."

They knew nothing of endosmosis, or exosmosis, or of the reflex action of the nerves, or of the functions of assimilation, and for a long time the size of the pineal gland was an evidence of the energy and force of character of the man. Yet they were earnest students, and honest in their convictions of what they considered truth, and yet possessed but little true medical science, or little knowledge of the healing art. And yet they did much to overcome the prejudices of the less learned in their pursuits of the knowledge of anatomy and the application of remedies to disease.

While these men were prominent leaders among the men of their day, we are led to reflect that the age and

Digitized by Google

country in which one lives eminently determine or specially modify the real, true character of the statesman, the scholar and scientist, and often apply the test of genuine greatness only to the discernment of its own people, and not for future ages to determine by unfair comparisons and criticisms.

While we admire the wisdom of Socrates, the philosophy of Plato, the elevated statesmanship and finished oratory of Cicero; the scientific breath of Aristotle and the teachings of Galen, the enlightened physiologist of his age, secure the greater admiration of the intelligent physician, as in his estimation they tower above all others; for they devoted their lives in the interest of science and the cause of humanity.

Having thus for a few moments turned our attention to the early founders of medicine, we will now bridge over the little period of a few centuries, and stand in the presence of a more thorough knowledge of medical science, and the higher culture at the close of the nineteenth century. Here we find the physician robed with professional honors, and the leader in many of the social and civil reforms of advanced civilization.

His life study is to know how he can best serve his fellow-men, and his inventive genius and his great discoveries in the healing art make him prominent among them, and he feels a consciousness of doing his duty faithfully, and receives the earnest prayers of the afflicted, with only a small pittance of the substance for the pabulum of life.

Upon the battle fields and in the hospitals he is the most vigilant friend of the sick and wounded. Through the weary hours of the night he watches by the sick bed, in squalid apartments, with no other compensation than the "God bless you" of his patient; yet there are many illiterate pretenders among us, holding diplomas, who dishonor the profession, and are unworthy of any position among honorable men.

It is quite possible that the errors of the profession have in times past contributed much towards fastening the incu-

Digitized by Google

bus of quackery upon society, and while the human mind is filled with a love for the marvelous, this incubus will continue to exist, in some form, in spite of all prohibitory legislation.

Yet the profession can do much to modify the evil by demanding that the standard of medical education shall be increased. And now that we have a law regulating the practice of medicine, we should give it our earnest support, and compel the public to respect our edicts in its behalf. As the profession has taken this step in the right direction, I would now recommend that a committee be appointed to be called the "Committee on Social Evils," whose duty shall be to investigate this subject, and report to this society the result of their investigation at its next meeting, that a Legislative Committee may then be appointed to secure such legislation as may be consistent with the objects in view as a sanitary measure.

I am satisfied that the public are wholly ignorant of the amount they are paying annually in consequence of this evil, and am assured that not less than one-ninth of the expenses of the County Hospital of San Francisco is for the treatment of venereal diseases. In this connection I also suggest, as a private enterprise, that a Venereal Hospital be established in one of our leading cities, by some of the prominent members of the profession, that the advertising quack may no longer endanger the transmission of the disease to the innocent offspring of misguided parents. We have a sacred trust confided to us as guardians of the public health, and we must leave no avenue unguarded for the approach of the enemy.

From July 1, 1876, to June 3, 1877, the whole expense of the City Hospital was $73,534 34. The number treated was 3,012; of this number 348 were venereal patients, which cost the city $8,484 24, or nearly one-ninth of the whole expense. And besides this, it is probable that not less than 1,500 cases of venereal disease are treated annually in private practice in the State of California.

And I now congratulate this society, and the profession

Digitized by Google

at large, that the course of the medical schools of California has been changed, and that after this term three years will be required for graduation; and I have no doubt that the Professors have been guided by the prominent idea that this extended course is one of the best means to accomplish so desirable and important an end as to overcome quackery.

And I am assured that the present requirements of our medical schools compare favorably with any of the medical colleges in the older States of the Union.

This is as it should be, for the demands of civilization and progressive medicine are imperative for a higher culture and a more thorough knowledge of medical science, as well as a knowledge of some of the branches of the cognate sciences, that the profession may be better prepared to discharge the various duties in the cause of suffering humanity.

Another forcible way to overcome quackery, or to modify the nuisance, is for the physicians and the professors of medical schools to see that none enter upon the study of medicine who have not by nature some fitness for the profession. And when any young man who has no particular fitness or fondness for the practice of medicine applies for a pupilage to any physician, and his friends are anxious for him to engage in one of the learned professions, he should be discouraged from entering a medical college, and be advised to read law or theology, for it is better to endanger the souls under his charge, or the rights and title to property, than have our graveyards filled with the victims of medical ignorance and diplomatized quacks. And, besides, if one reads law he will not be expected to remember what he has read, or the special application of any principle of law in any important case, and will be given the privilege of refreshing his memory by consulting his authorities in open Court.

And yet this class of attorneys are pleased to badger the physician when upon the witness stand, and there is no opportunity to reply to their insults, and I doubt whether

Digitized by Google

there are many true gentlemen in our profession who would care to reply.

But what would the physician do if called to a case of primipara with a placenta prævia and an inertia of the uterus, with the life-fluid ebbing fast—or rather what would the patient do under such circumstances—if the physician did not understand his business and was obliged to go to his office to consult the authorities? If she didn't die we might almost consider it a case where there was an interposition of Divine Providence, rather than attribute her recovery to the skill of her medical attendant.

In our profession there should be an eternal fitness of things, and things should fit eternally for the safety, advancement, and utility of life. Life is too sacred and of too much consequence to be placed in the hands of thoughtless men, and yet there are many intelligent persons who will pay more to secure the title to a small piece of property than they are willing to pay to secure a new lease upon life; and it would seem, in some cases, that the property had the greater intrinsic value. But the physician has nothing to do with such comparative values; his estimate of value is in his own services, which will be to obtain the largest amount his patient is able and willing to pay, and he can never get too much.

The son born of a woman with strabismus, and whose father has bow legs, is not responsible for not looking in a straight line and waddling along the pavement of a busy city, for no sensible person would expect anything else of him. And the same moral and intellectual deficiencies exist in the offspring that are observed in the parent, just the same as the physical deformities are observed. So there must be a fitness in the individual for any particular business, or one cannot meet with success in any calling of life; and any effort to draw out the dwarfed intellect from the "acres of untilled brain" will be so much labor lost and so much effort to fasten unworthiness upon the credulous and lessen the dignity of our profession. It is said that "education forms the common mind," and makes the

Digitized by Google

man, and the truth of this declaration I would not wholly ignore; but unless man is first made by the Almighty, no amount of learning can do it. And I do not say this in levity, but with the most profound reverence. And there is a great mistake made by parents oftentimes when they urge their sons to enter one of the learned professions, for without a particular fitness by nature for a professional life, few will ever succeed who engage in the labors of such a life. There are and always will be a plenty of well-informed medical men to attend to the wants of suffering man, and there is no occasion to put the medical mill in operation to grind out ordinary material. And yet we have reason to believe that there have been medical schools which were willing to encourage the matriculation of poor material provided the *fees* were all paid. Such schools jeopardize the dignity of the profession and cheapen the educational commodity dispensed. It is better to be the lone offspring of a lion than one of a numerous brood of chicks.

We must not forget that the mental powers of men are as diversified as the soil of the earth, and that minds must be classified in order to determine the fitness of any one for any particular calling in the walks of science.

The prudent farmer would not plant his orchard among the barren rocks, nor select the wet adobe soil for his garden of roses and flowers of the sweetest perfume, for no amount of tilling or reclaiming could ever prove the fitness of such a selection for the growth of fruit or the cultivation of the beautiful, for the fruit will grow small and the flowers become of lessened beauty.

And so it is with some minds upon which may be poured a continual stream from the fountain of knowledge, for the soil is not materially enriched, and the fruit is dwarfed and blighted, while upon other minds fair efforts produce marked improvement; others yield a liberal harvest of original ideas by good culture, and like the alluvial prairies adorned with fruits and flowers, only require the introduction of

Digitized by Google

seed to afford all the rich varieties of products that may be desired.

Men with such minds we should encourage and none others to enter the profession, for they only will become eminent and useful in the practice of medicine and honored members of society.

* * * * * *

I desire to call your attention to the importance of some further legislation upon the subject of State Medicine.

Progressive civilization has made State Medicine a necessity, and the physician has become the guardian of the welfare of the people, to see that all sanitary laws are enforced; he determines the value and purity of drugs and medicines in the market; calls the attention of the officers of law to the baneful effects of nostrums which are vended for criminal purposes—as fœticide, which is the abomination of the age, a curse to civilization, and a foul blot upon the history of a Christian people.

He is also the chief sentinel upon the sanitary fortress of the nation's defense, to summarize and classify the various morbid influences which seriously disturb the health and comfort of the people.

And State Medicine urges him to obtain and preserve vital statistics, to enforce vaccination, see to the quarantine of vessels infected with loathsome diseases, attend to disinfection, which service is of the greatest importance to the State, and daily proves the great value of medical science.

But in order to obtain the statistics which properly come under the head of State Medicine, some more clearly defined law should be placed upon our statutes, which may be enforced without requiring the physician to assume the burden of labor unless he is properly remunerated; for it is now impracticable for a committee appointed by any State Medical Society to obtain such information on this subject as will enable them to make a report that will present any thing more than a synopsis of the facts sought to be gained.

The laws regulating State Medicine should also be most

Digitized by Google

comprehensive, and liberally provide for the remuneration of the gentlemen who serve as "medical experts;" and our medical colleges would meet a pressing need in many criminal suits if they would be a little more exacting and a little more in earnest in the instruction of medical jurisprudence.

For the physician who goes into Court with a very limited knowledge of forensic medicine, and is burdened with the cares and anxieties of his private practice, will be quite sure not to acquit himself in a manner to secure the fullest confidence of the Court and jury in his favor. Besides, being detained in Court as an "expert," more is expected and required of, and less provision made for the physician in proportion to his services, than of any laborer or other professional man in the commonwealth; and there is no more justice in requiring him to give his services as an expert free of charge, than there would be to require the chemist to make his analysis free of charge to the State, on the plea that such service was in behalf of science and humanity.

The attention of this society was called to this subject at its last meeting; yet it seems to me to be of such importance that I cannot well refrain from calling your attention to it again on this occasion.

As you are aware, a bill was introduced at the last session of our Legislature, having clearly in view the means by which the wrong of which we complain about "experts" might be remedied; but it failed to meet with that attention and support to which it was entitled, and consequently we are left as in times past. I would recommend that this subject be referred to a special committee, to report at our next meeting.

In conclusion, it is my sad duty to announce to you the deaths of Dr. P. Chamberlain and Dr. John C. Van Wyck. They were both members of the Board of Censors, affable and kind-hearted gentlemen, and by their decease this society has lost two of its worthy and highly esteemed

Digitized by Google

members, and the sick and afflicted are deprived of the faithful attention of two skillful physicians.

In another of our members the throne of reason has been invaded by strange hallucinations, and we behold one who a year ago was prominent among us, now bereft of reason and confined within the narrow limits of an insane asylum. And now—

His life is but a living death—
A sad, sad waiting here—
Whose hopes are like a faded wreath,
With no bright flower to cheer.

These examples admonish us how uncertain is life, and how uncertain the duration of our abilities to discharge its duties. But I will leave this subject with the Committee on Necrology, who will pronounce the fitting eulogy.

Digitized by Google

RECENT ADVANCES IN SURGERY.

BY L. C. LANE, M. D.,
CHAIRMAN OF THE COMMITTEE ON SURGERY.

The task having been assigned to me of presenting to this association a Report upon Surgery, I find my undertaking, since the domain of surgical art and science is broad and of ill-defined bounds, by no means an easy matter. To include in such a paper details of facts which are well known, would be a piece of didactic work better suited to a class of students than to a body of well-instructed medical men. Again, if such a report were to confine itself to giving an account only of that which was discovered, or first announced yesterday, then it would run the risk of announcing as actual and established facts that which in future may be found untrue. Again, to dilate into the exhaustive details of an elaborate essay, would early awaken that symptom of a coming tertian or of actual ennui called oscitation, politely suggestive to the reader that there has been enough of it. Shunning, then, the well-known, which may be found in text-books, or the illy-known, which future experience is yet to reject or accept, or the tiresome details of an elaborate essay, the pleasing idea suggests itself that here is a splendid opportunity for a little personal surgical emolument in dilating upon the wonderful facts achieved in my own practice. Less sad than was the task to the Trojan hero, as he told Dido the varied fortunes through which he had passed, and of which he himself was a great part, would be my undertaking, were I to tell you of my own exploits. For example, of the brilliant dash which my lance made as it plunged into the fearful recesses of a paronychia, shunning the Scylla of a digital arteriole on one side and the

Digitized by Google

Charybdis of a similar ramuscule on the other; or of what a swell my scalpel cut as it made its way into a mammary abscess, and, *mirabile dictu!* the subjacent aortic arch was not touched by my blade; or with what unparalleled delicacy of manipulation my right hand thrust a probang into a diphtheritic fauces, and, lo! the vagus and cilio-spinal ganglion escaped intact; nay, more, the salivary spatterings were so dextrously shunned that my surgically knighted lappel came out of the struggle immaculate.

Were I to pursue such a course as that just hinted at, and present the same as the hither and remote limits of progress recently made in California surgery, the offering being in the shape of a little book neatly bound and well illustrated, besides the claim of precedent, economy might also be urged in its behalf, since the association would be spared the expense of printing, a most commendable item in these hard times, when labor riots like dark clouds are looming up in our political horizon, and retrenchment is inscribed on every banner.

In the commencement of the confessions of his life, Jean Jacques Rousseau says—that, at the final day of judgment, when all shall appear before the throne of the Eternal to give an account of their lives, he will present his book, saying to the Almighty, "Behold my life." Now, if with his proposed post-mortem impudence I were to present such a little book, purporting to be a Report upon the Recent Advances of Surgery, though it should have the effect of bread cast upon waters, when dropped into the hands of patients, and should be sweet in my own mouth, like its predecessor, I fear it would prove very bitter in the belly of this association.

With this preface, in which trenching upon the personal has been abstained from, inasmuch as I have adhered to Seneca's rule—*Dicere de vitiis, parcere personis*, viz: criticise vice, but spare names—I proceed without further delay to what seems to me the legitimate duties of a Report upon Surgery, selecting what appears to be important, and treating the same with brevity.

Digitized by Google

In the domain of surgery, the consideration and treatment of wounds predominates in importance over all other subjects. Though no statistics exist on which to base the assertion, yet I think it would be safe to affirm that much more than half of all cases demanding surgical care are either directly or indirectly traumatic in character; hence the necessity that the treatment of wounds should be as faultless as possible; and hence the reason why our generation has restudied the subject, and, as a result, both surgical science and surgical art in this department have undergone, recently, a complete revision. Hunter's exudation theory, which during a half century held sway as unquestioned truth, and was especially defended by Rokitansky, has been rejected as erroneous; and in the place of the retired plastic lymph, Virchow's connective tissue cell and Cohnheim's amœboid corpuscle are disputing for the ascendancy, and surgical pathology is inclined to compromise the matter by conceding to each agent a share in the healing process.

In like manner the mode of treatment of wounds is in rapid transition from old to radically new methods. In the olden times, which conservatism fondly calls the good and would fain have us lament the departure of, balsams and panaceas, all things in the range of the clean and the unclean, were invoked as healing agents; astrologic aids, remedies borrowed from dead and living bodies, from plants and from the earth, were sought to heal wounds; in the horoscope of modern surgery all these auspices or aids bring ill, since the coy maiden, Nature, is frightened away by them. It is now known that the wounded part contains and furnishes all the means for its restitution to integrity, viz: by a reversion to something akin to the primitive embryonic state, it evolves from germs living in its own soil the elements for closing the traumatic breach. Instead of the wounds needing astral, telluric, or vegetal aid, all such agencies are obstructive; and further, it is known that infinitesimal forms, as the vibrio, the micrococcus, and bacteria, by chance stealing into the wound, mar and throw into confusion the silently working agents of repair; and such

Digitized by Google

confusion having once arisen, we have the more tedious process of restitution by second intention, or, perhaps, no repair at all. To bar out the intruder micrococcus, and to prevent the bacterian from converting the wound into a pool of natation and propagation, is the great problem which the modern surgeon is endeavoring to solve.

Scotland, whence Great Britain has received many of her greatest men, has given to surgery two enduring names, viz: John Hunter and Joseph Lister. In the gloomy air of Lincoln-Inn-Fields the medical pilgrim finds a fitting monument to the one, viz: the Hunterian Museum in the Royal College of Surgeons. To posterity is reserved the honor of rearing a monument to Lister, for what he has done toward solving the antiseptic problem, though, I may add, that his cotemporaries have duly honored him by appointing him as the successor to the late Sir William Fergusson. Though I thus honor Lister in conceding to him the merit of having been the pioneer in antiseptic research, and of having introduced the best modes of dressing wounds as yet known, still, to quote his own language to me while lately abroad, it is probable that better antiseptic agents than any now known remain yet to be discovered; and, besides, his assistant told me that scarcely a week passed that Lister did not bring some new agent to have tested as to its antiseptic properties. So, unlike most men who are declining from the vital meridian, whose opinions have become stereotyped, on the contrary, Lister has not thrown his carbolized vesture around him with the purpose of carrying it to his grave, but he still remains imbued with the true spirit of progress.

It was often a matter of amusement to me to see how differently the antiseptic treatment was received by the various European surgeons whom I saw. As a rule, it was adopted by young men, and often with enthusiasm, whilst among old men the majority were disposed to scoff at it. A few, from their positions as teachers, were compelled to examine it, and even make a trial of it; yet these did so hesitatingly, grudgingly, scoldingly. One very eminent

Digitized by Google

master in surgery, though he often used it, never failed to let drop some satirical epithet against it.

It having a few years since been discovered that microscopic germs cannot penetrate through cotton wadding, a French surgeon at the Hotel Dieu conceived the idea of adopting this as an antiseptic dressing. This plan, called by the French the *dressing à louate*, that is, by wadding, is as follows: Where a limb is amputated, after the vessels are secured and the flaps are placed in proper position, the stump is wrapped in an immense mass of cotton batting, and the cotton is thence to be continued about the body until a large part of the patient's body is hidden in cotton. After application, the cotton is to remain undisturbed for a number of days. By this plan healing by first intention is often secured. The wadding dressing, first resorted to by J. Guerin, has the advantage of being much cheaper than Lister's mode; and besides, it is rare that one would be where the only ingredient, viz: cotton, could not be procured.

During the last three months, the Society of Surgery and the Academy of Medicine in Paris have had under consideration the so-called coxo-femoral disarticulation, or amputation through the hip joint; and in the discussion upon the matter, all the leading surgeons of France have declared their ideas in reference to the best method of dressing wounds resulting from amputation. All agree that there should be more caution in reference to the loss of blood during operating, and that to this cause is to be attributed the so-called death from shock; and that to avoid such loss of blood, when it is possible, one should tie the main arteries before severing them. This plan, claimed as original by Verneuil, has, to my certain knowledge, been practised on our coast during the last ten years. Verneuil, to whom as an original thinker and operator may be assigned the first place in French surgery, has evidently made an error in advising that the flaps should be left open during the after-treatment of the coxo-femoral disarticulation. To digress for a moment from the subject, I will advert to the

Digitized by Google

recently published observations of Verneuil concerning the influence which hepatic and renal disease, or any grave constitutional trouble, may have on operative traumatism. According to Verneuil, death following an operation which was not grave within itself, is to be imputed to the visceral or constitutional complication.

While on this subject, it should be mentioned that at a late meeting of the Academy of Medicine, when the matter of dressing wounds was under discussion, Pasteur, the well known authority on the subject of germs, stated that vibriones, which, lodged in pus, are capable of developing into higher forms, are anæribioid, that is, die if exposed to air; but if they are retained in a vacuum, or in carbonic acid gas, they are developed.

Another point worthy of attention by your reporter, is the explanation which has lately been offered by Duret, of what occurs in concussion of the brain. Instead of the trouble depending on a sudden molecular agitation of the cerebral structure, Duret, by the slaughter of near a hecatomb of dogs, has satisfactorily proven that the lesion is produced by the sudden movement of the liquor cerebrospinalis towards the base of the brain; such movement, if severe, causing laceration of the fourth ventricle, and consequently injury of the nerve-nuclei seated in the medulla oblongata; and from such lesion of the radical nucleus of the vagus, one can explain the irregularities of breathing and of cardiac action seen in such concussion; also, from lesion of the nuclear origin of the motor oculi, the resulting palsy of the sphincter muscle of the iris arises. And as counter-proof of the same, Duret opened directly into the fourth ventricle, and then with his little hammer and staff, he, as a pianist, successively touched the nuclear keys of nerve-origin, and, at will, evoked a pathological response in the lungs, heart, eye, or face.

I will venture to introduce into my paper an interesting fact which has lately been discovered, that the inflamed lung tissue reverts in the epithelial and sub-epithelial structure of its tubules to the primitive embryonic type; the

Digitized by Google

same occurs in the antecedent stages of renal and hepatic cirrhosis, where inflammation has been provoked by art in the ligation of the bile duct, or of the ureter; or by nature in the closure of these outlets by a gall stone or a renal calculus. An integration of these facts gives us glimpses of a beautiful law, viz: that under traumatism, it matters not whether internal or external, the structures of the animal organism recoiling, tend to revert to their simpler primordial forms, viz: such as are met with in the embryo, the organism meanwhile straying but slightly from the primitive epiblastic, mesoblastic, and hypoblastic routes traced out for it in the map of life by the hand of nature.

In the treatment of cysts, or even of abscess, located in the abdominal cavity, when of hepatic or splenic origin, an innovation upon the former method of treatment should be noted. Instead of aspiration or of evacuation by opening with the bistoury, the plan has lately been resorted to of opening with the trocar and canula, and after emptying the fluid as far as possible, to allow the canula to remain inserted; the stationary tube is to be closed, but to be opened from time to time, as the fluid may reaccumulate. I saw a splenic cyst treated in this manner, successfully, by Pèan at *L' Hopital de Saint Louis.* Some recent personal experience in this way of treatment has not been crowned with that success which has been claimed for it by its advocates.

In the surgical department of the eye, I witnessed the operation for extraction of cataract as done by the leading men in England, Germany, and France, and am able to report that there is occurring a gradual departure from Graefe's sclerotic cut to a corneal incision—that is, there is a reversion to some modification of the old plan of Daviel. Liebreich has wholly discarded the operation of his master Graefe, and W. Wecker has done so in the most of cases. It is singular that while all the surgical world was so unanimous in regard to the perils to vision which result from injuries of the ciliary body, that they were so blind to the

Digitized by Google

risks to which this body is exposed every time that the Graefean sclerotic cut is made. Graefe's expert hand could, no doubt, guide his chariot wheel clear of the dangerous mete, while other hands, less adroit, would fail to come off Olympian victors.

The subject of sympathetic affection of one eye, where the other is the seat of disease or injury, has been the matter of much discussion during the last ten years, and has revealed the fact, that a sound eye may thus become, if not blind, at least much impaired in its function. Students of this subject have not agreed upon an explanation of the sympathetic or secondary trouble. In order to save the sound eye from such attack, it was early proposed to remove the afflicted one by the procedure known as enucleation. Thus on *a priori* grounds it was claimed that the exciting cause being removed, the patient would be safe. Where the diseased or wounded eye is already blind, or beyond the hope of rescue under proper treatment, and still remains the source of constant pain, no one would deny the propriety of its removal, but whether such removal will save the sound eye from sympathetic trouble, is now becoming doubtful; in fact, observation has shown that the reverse may occur. Indeed, Stilwag Von Carion recently stated in a lecture which I heard, that in some cases where he had practiced early enucleation, still sympathetic trouble afterwards appeared in the other eye. In fact, he intimated that the traumatic lesions accompanying the enucleation may hasten the morbid development in the sound eye. This matter was recently the subject of discussion at the International Medical Congress, which met in Geneva. The final vote was favorable to enucleation where the eye was the seat of constant pain; but the opinion prevailed in accordance with Stilwag's, above stated, viz: that removal of the diseased eye does not secure the sound eye from sympathetic attack. The mode of enucleation has lately been much improved by the ingenious Brudenell Carter,

Digitized by Google

of St. George's Hospital, London. Carter's plan is, before removing the diseased bulb, to sieze and ligate the several ocular motor muscles, so that after the globe is removed, these muscles may be so tied together that perfect motion will be preserved to the stump. Thus the nearest possible approach is made toward securing perfection of movement to the artificial eye. In two cases in which this mode of enucleation was practiced, the advantages claimed for it by Carter appeared to me to be fully realized.

In case of perverted position of the eyelid, Verneuil has recently introduced a new operation, which he names tarsoraphy, which signifies literally, sewing the lids together. This procedure may be used in case of inversion or eversion of the lid. The theory in reference to it is, that after the lids are united by suture, the malformed tarsal cartilages are forced to assume the normal position, and if kept so for a sufficient length of time, they will retain their form. The time requisite to complete a cure in such case is not less than three months. In Verneuil's wards one may see, any day, one or more persons walking about with one eye thus sewed up. The long closure does not seem to injure the eye.

The treatment of cleft palate, where the fissure involves the bony arch of the mouth, has recently undergone much improvement, by the adoption of the osteo-plastic process of Dieffenbach. This, the so-called osteo-plastic uranoplasty, remained for a number of years quite forgotten in the works of Dieffenbach, until a comparatively late date, when the operation was revived by the late Sir William Fergusson, and has become the happy means of rescuing many mouths from terrible deformity, as well as from the very unpleasant alternative of resorting to a dental obturator to close the fissure. The leading idea in this operation is to detach and move into the breach a portion of the adjacent incomplete arch; and nature, who has left open the median fissure, will not tolerate the lateral gap which the surgeon's hand has made, but sets to work and soon repairs it. Provided the subject be young and healthy, and the

Digitized by Google

opening be not of syphilitic origin, the surgeon, by patient work, can effect a closure. In two cases, during the last year, the writer has practiced it with successful issue. The operation, even in the expert hand of Sir William, was so tedious that he was accustomed to remark, that a class of students who was patient enough to sit to the conclusion of the operation, deserved a premium.

The localization in the brain of the motor centers of the upper and lower extremities by Fritsch and Hitzig has given an indication for trephining, where hemianæsthesia and hemiplegia have followed apoplectic seizures; likewise, where the conditions date from traumatic cause. Every pathological discovery has eventually as its correlate a therapeutical application; and though the seed may be long in maturing, yet sooner or later, the attentive practitioner will reap a harvest from such knowledge. Yet the use of the trephine in this case to lift the offending clot from the oppressed motor center is a procedure which never can receive the sanction of prudence; as the middle term of the syllogistic formula must be by no means ambiguous, so in the classic formula which surgery has adopted as its guide, viz: *cito tuto et jucunde*, our middle "tuto" must be so amply distributed as to guard the field. Tried by this rule, trephination is clearly illicit, and cannot be accepted as the therapeutical correlate of Fritsch and Hitzig's splendid discovery.

In consequence of the dangers attending Cæsarian section, of which there has not been one successful case in France since 1787, surgeons have been recently endeavoring to lessen the danger by various modificatious of gastrotomy. The last phase of the operation is the so-called procedure called gastro-elytrotomy. By this method the peritoneal cavity is not opened. The incision, instead of being vertical as in the old Cæsarian section, is made transversely, reaching almost from one anterior iliac spine to the other, parallel with and just above Poupart's ligaments and the pubic arch. The final opening is to be made through the upper extremity of the vagina, the uterus being left

Digitized by Google

quite intact. This operation cannot be undertaken until the uterine cervix is thoroughly dilated, so that the child may be removed through the mouth of the womb, through the supra-pubic cut. The advocates for this operation claim that it has so many advantages that it must take the place of the old mode of Cæsarian section.

In the section of orthopædic surgery, I observed at the Lariboisière Hospital, that in cases of badly bow-legged children, the attending surgeon Tillaux, instead of resorting to the slow methods of straightening by means of mechanical appliance, forcibly straightened the limbs, even though to accomplish this it was required to fracture the limb. The deformity being thus overcome, straight splints were applied to the legs so as to retain them so. The results obtained were very satisfactory.

To account for genu valgum or "knock-knee," Ollier has lately offered a very ingenious explanation, viz: that the deformity proceeds from abnormal development of the epiphysal cartilages in the upper end of the tibia. According to him, the epiphysal cartilages, instead of being developed as disks of equable thickness, in knock-knee they have a wedge form, the base of the wedge being directed inward.

The treatment of ozæna or nasal catarrh, is attracting of late more attention than formerly, and was the matter of discussion at the recent International Medical Congress. This disease, of which the leading symptom is fetid breath, depends upon suppuration or ulceration of the nasal passages, and in the more obstinate cases the disease is located in the mucous lining of the antrum, sphenoidal, and ethmoidal cells, or in that lining the frontal sinuses. From the labyrinthian character of these passages, it is evident that every therapeutical approach is made with difficulty; and in order to accomplish this the aid of the atomizer syringe douche has been invoked for the purpose of bringing astringent, escharotic, alterative, and disinfectant remedies in contact with the affected parts. In case all these measures failing to cure, the bold surgical procedure has been

Digitized by Google

resorted to of directly opening the nose, so that the affected structure would be open to both sight and touch. For opening the nose numerous incisions have been proposed. The one generally practiced is to make two lateral, deep, sublabial cuts, so that the nose may literally be lifted up, and through the door thus made the diseased structure may be removed. Another method is the median division of the nose, so that either wing may be turned down, thus making a window through which further operative work may be done. The first method is preferable, as after accurate replacement of the nose there is but a trifling scar left.

In the treatment of urethral stricture forcible dilatation is being abandoned, and the slower method of gradual dilatation is again rising into favor; but where the canal is impermeable, perineal urethrotomy—the so-called *coutonière*—is being practiced by the surgeons of St. Peters Hospital for Urinary Diseases, London. Mr. Teevan, the able champion of urethrotomy, has collected together nearly forty cases of death following forcible dilatation.

During the recent epidemic of diphtheria in this State, the operation of tracheotomy was frequently performed for the relief of cases where death was imminent from strangulation. For some years past medical and surgical opinion here has been undergoing a gradual change in reference to this matter. Twelve years ago tracheotomy was rarely done, even in cases of pure croup; to-day almost all our surgeons are agreed as to the propriety of operating in all cases where the child is threatened with death from strangulation, no matter whether the case be one of croup or diphtheria. The result has been that several lives have been saved which without operation must have been lost. Among forty cases which I have operated upon during the last fifteen years I reckon twenty per cent of success, and among these was one of the worst cases of diphtheria which I have ever seen. The nares were wholly occluded by the membrane, and the fauces, larynx and trachea were wholly lined with the same, and so tenacious was the diphtheritic

Digitized by Google

growth of life, that after its removal from the windpipe below the tracheal incision it reappeared there on the second day, so that it was necessary to remove the canula and introduce a straight whalebone probang, by the aid of which the membrane was detached and dislodged. After this the case proceeded without interruption to recovery.

Within the past few years the actual cautery has been coming into fashion, especially for the removal of growths where hemorrhage is feared. For instance: it is being employed for the extirpation of the carcinomatous uterine cervix, and for the removal of angiomata or blood-growths in children. For such operations, the use of the actual cautery is rational and well indicated, but to make it a substitute for the scalpel in the performance of large operations, such as amputations, removal of the female breast, and even lithotomy, can by no means be recommended, and I suspect will not be attempted by any of our surgeons, though I witnessed such use of it in Paris. For example: Pèan removed thus an exceedingly large carcinomatous breast, and Verneuil thus operated for stone, and recently I see that Tillaux has thus disarticulated the femur, though to sever the immense flaps in the latter operation, the thermal generator failing to generate a sufficiency of heat, Tillaux was forced to complete the operation with the knife.

The favorite mode of generating the heat employed in these operations is by means of a galvanic apparatus. One great objection to the method is that the galvanic apparatus is constantly getting out of working order, and can only be put in action again by an experienced electrician. In consequence of this defect, the galvano-cautery has lately been to some extent superseded by a thermal cautery. When Richardson invented his frigorific or freezing apparatus, he did not suspect that the same could be equally well used for burning; all that is needed to do so is to light a match and touch the escaping ethereal vapor. And now, if a fenestrated tube, ending in a cutting point, be caused to

Digitized by Google

ensheath the flame, we have the cheapest and most convenient of all thermal cauteries.

The use of heat for surgical purposes is not new, for in an aphoristic trilogy, in which Hippocrates has compressed all therapeutics, it is alluded to, viz: "What medicine does not cure the knife cures; what the knife does not cure fire cures."

Digitized by Google

REPORT ON MEDICAL EDUCATION.

BY H. S. ORME, M. D.,
CHAIRMAN OF THE COMMITTEE ON MEDICAL EDUCATION.

MR. PRESIDENT, LADIES AND GENTLEMEN OF THE CALIFORNIA STATE MEDICAL SOCIETY: Medical education is an old and hackneyed theme. For many years the best minds in the profession, in this country and Europe, have brought to its consideration the great wealth of their judgment and opinions, and the testimony of their experience.

Distinguished professors, whose patient researches and tireless investigations have enabled them to win laurels as instructors of aspiring pupils, have felt that their life-work was unfinished if they failed to impress upon the rising young members who were to succeed them, the incalculable importance of a higher standard of education than had prevailed in their day.

Perhaps a firm belief in the correctness of the adage, that "Truth is mighty and must prevail," has been the sheet-anchor of their ever-distant hope, and that its realization is being witnessed by us in the return, after many days, of the bread which they have so persistently cast upon the waters.

In contributing this paper to the already voluminous literature on the subject of a higher medical education, I shall offer nothing new, but shall merely pass in review what abler co-laborers in the cause have said and done, and present such suggestions as have been dictated by the light of experience and observation.

The first point which has been established by the recent discussion of the question of medical education, is that there are too many medical colleges in the United States.

Digitized by Google

The supply of medical men has long since exceeded the demand, and the profession is overcrowded; especially is this true of the Pacific Coast.

In California the ratio of physicians to the population was, according to the census of 1870, as one to 445; in Oregon it was one to 441; in Nevada, one to 386; in Arizona, one to 439. In the Eastern States the average is noticeably less. For instance, in Minnesota, it was one to 1,093; in Wisconsin, one to 1,043; in North Carolina, one to 937; in Rhode Island, one to 836; in Pennsylvania, one to 727; in Connecticut, one to 790; in Maine, one to 766; in Massachusetts, one to 711; in Georgia, one to 770; in Florida, one to 757; in New York, one to 642; in Virginia, one to 576; and in Indiana, one to 465.

Evidently the young and inexperienced graduate in medicine prefers to try his fortunes in a new country, where there is likely to be less discernment and criticism on the part of the people.

The number of physicians in the United States in 1870 was 62,383, equal to one to 618. The number of medical colleges was 94, or a proportion of schools to population, as one to 477,392.

In confirmation of the above figures, the Special Report of the United States Bureau of Education, by Professor Davis, shows 2,200 graduates for the years 1875 and 1876, from 65 regular medical colleges. So that when it is considered that several colleges did not send in any returns, and that there were 600 graduates from Homœopathic and Eclectic institutes, and the colleges of Pharmacy, it is safe to estimate the yearly number of graduates at not less than 3,000.

For purposes of comparison it may be stated that in Great Britain there is one medical man to 1,672 people, and one medical college to 1,705,895 persons; in the Austro-Hungarian Empire, one to 2,500 persons, and one college to 6,000,000 of population; in Germany, one to 3,000, and

Digitized by Google

one school to 1,785,248; in France, one to 1,814, and one college to 6,000,000 people, as in the Austro-Hungarian Empire.

These are suggestive contrasts, and it is painfully apparent that the United States is the medical hot-house of the civilized world, having reduced this process of forcing to well nigh a fine art.

The result is that every year floods some 3,000 unskilled and mostly incompetent men upon the country, whose diplomas guarantee them license to trifle with human life.

This being so, we must all agree that there are too many medical colleges in this country; that the standard of elementary education required of the matriculate is too low; that the curriculum embraces too limited a range of research; that clinical lectures as a rule are little short of formal theorizing; that the course of study is too brief; and finally, that the whole business of making doctors out of raw material, sadly needs reforming.

Has anything been done to remedy these evils? We think there has; the bright light of a new day dawns upon us from the East. The Medical School of Harvard University, in 1871, as you are aware, inaugurated a system of education in that institution, which has stood the test of experiment for over six years, and has fairly won for that venerable university the imperishable honor of being the pioneer in the greatest of modern medical reforms.

Dr. John M. Browne, in his admirable and succinct report to this society last year, has given us a graphic and satisfactory account of this new departure in medical education. I refer you to that report, and with the important suggestions contained therein I am sure we all concur; more especially regarding his recommendation, that the "Medical Department of the University of California be made to approximate as closely as practicable to the present organization of the Medical Department of Harvard University."

This recommendation I am happy to announce to you has borne good fruit. The Medical Department of the

Digitized by Google

University of California and the Medical College of the Pacific have each conformed to this new system, and have formally established a three years' graded course of medical instruction in their respective schools. This is also gratifying to our sense of local pride, as every true Californian must feel a deep interest in the development and culture of all those who enter upon the study of our profession, and especially in the youth of this coast. These schools are attaining high rank, and we have reason to hope will soon be second to none in America.

The Medical Department of the University of Pennsylvania, the first established medical school in America, has also announced to the world that the plan or system of medical education which had been conducted in this institution for more than a century, has been replaced by a higher and better system. We learn from their annual announcement, that "the present reform is designed chiefly to introduce into the official curriculum of medical study the methods which have long been used in European schools, and which in all other departments of science have given vitality and practical utility to the older didactic system."

It is also claimed that the Chicago Medical College, the University of Michigan, and the University of Syracuse, have adopted this system of higher medical education.

These notable examples are worthy of emulation by other medical schools, and deserve the heartiest encomiums at our hands. Measures of reform, to be permanent and thorough, must come from the profession itself.

The medical schools of this country must follow the example of the British and Continental schools, in rigidly rejecting applicants who are not properly qualified to matriculate.

As it has been truly said, "the first step towards improvement in any art or science, must be the faithful exposure of its wants and deficiencies," a large number of representative medical colleges, feeling the effect of this

Digitized by Google

deficiency, have formed an association for the purpose of perfecting the system of medical education.

Dr. Pepper, in his elaborate and valuable "Introductory Address before the Class of 1877–8, of the Medical Department of the University of Pennsylvania," says: "It is by no means designed to restrict the study of medicine to those who are fortunate enough to have enjoyed a collegiate education; but, as it is necessary to compress the purely technical studies into as short a period as possible, and as certain habits of application, and a certain amount of general education are requisite to enable the student to pursue to the best advantage the studies of the medical school, it is in the highest degree important that he, unless already a graduate of a literary college, should be expected to pass a preliminary examination on the elementary branches of a general education. The absence of such a preliminary examination in our system is therefore a grave defect, and one which operates as much against the interest of the student himself, as it does against the average qualifications of the profession."

Sir Wm. Gull, in his address to the General Medical Council of Great Britain, in May last, says: "It appears to me that every member of the Council agrees in this great fact, that the medical student of the future should be better educated than he has hitherto been, before he begins his professional duties, and that what has been done up to the present time is not enough. * * * * I know that there is a general feeling that men come into our profession untrained. Ours is an intellectual profession, and it is essential, I believe, that a large number of men should be turned back at first; for I am persuaded that if their education were tested on the threshold of their student's career, they would be advised not to enter upon the study of medicine. How little Latin many of them know—less of Greek—bad spelling—intellectual training, none—mathematics, none—physics, nothing—the higher training of the mind, nothing."

Recently the Vermont State Medical Society passed

Digitized by Google

resolutions deprecating the lamentable deficiency in the preliminary education of candidates for diplomas, and requires of every student a good academic education, a certificate signed by a majority of the Board of Censors, or a diploma from some accredited school or college. A list of questions is to be published and used in the examination of students desiring to study medicine, and the answers must be approved by a majority of the Board before the applicant can be passed. This is certainly a commendable measure of reform, and it is to be hoped that the policy inaugurated will be strictly adhered to, and that this example will be followed by medical societies in other States.

We might here refer to the Medical Department of the University of Virginia, which is organized and conducted upon a plan which differs in some important respects from that of any other medical school. The annual term of instruction is nine months, and the method of teaching is by recitations and demonstrations, as in the other departments of that university.

The arrangement of the lectures is such that the student acquires a competent knowledge of anatomy, physiology, and chemistry, before he enters upon the study of the principles and practice of medicine and surgery. "The graduation of the student is made to depend upon satisfactory evidences of attainments only, without regard to the length of time he may have been attending lectures."

The above system, pursued for many years at the University of Virginia, wherein the preparatory English examination is made prerequisite before applying for graduation, has many warm advocates. On the other hand, it may be claimed that it is impossible to qualify men for daily practice after so short a period of study, as it necessitates the candidate to pursue a system of cramming to obtain his diploma, which is greatly to be deprecated.

Even under the solemn promise from the graduate that he will pursue a post-graduate course, the above period of time is too short; for it is well known that of the 2,200 regular graduates each year, very few ever pursue such a

Digitized by Google

course, however much they may be impressed with its importance, pleading want of time or means, deferring the opportunity until a more convenient season, which never comes.

With this exhibit of the present status of medical education, both in the United States and Europe, before us; in the light of the experience and earnest protest of the many distinguished professors, teachers of our healing art; it is well to inquire if this society has anything to offer as a remedy for these evils, to which it is prepared to pledge the weight and force of its influence?

Your committee can only offer you such suggestions as have addressed themselves to their personal judgment and opinion as suitable measures of improvement. These are:

1. To admit only those as students of medicine who have a thorough preparatory liberal education, as proven by the test of examination.

2. That all colleges adopt and enforce a three years' course, or better still, a four years' course of study, and that the professors receive fixed salaries.

3. That the classes be graded, and the student advanced only after satisfactory and thorough examination in the studies of each grade preceding.

It would seem to be advisable, therefore, for the colleges to fix a common standard of preparatory education, to be required of medical students, before entering upon their medical studies. Such examinations ought to prove that they can at least speak and write their mother tongue correctly, even though they may not be familiar with Latin and Greek.

The period of the study of medicine in all countries save the United States, is never less than four years, and at least in one instance (Sweden), not less than ten years.

Professor Pepper, in alluding to a three years' course for students of medicine, says: "I believe it is universally admitted that it is simply ridiculous to expect any student to acquire a satisfactory knowledge of medicine in less than

Digitized by Google

that time." The importance, therefore, of a more thorough and extended course of theoretical and clinical study for those who expect to bear the honorable title of M. D., is too apparent to need further elucidation.

All the professors and instructors in our medical schools and colleges should receive fixed salaries, and therefore be independent of the number of students attending their classes, or who may have matriculated. This is the policy now followed in the medical departments of Harvard University, the University of Pennsylvania, the University of Virginia, and possibly of several other schools. This plan is also being adopted in England and Europe as the only legitimate method of divesting professorships of the element of pecuniary interest in the number of their students, which we all know is too often effected at the cost of suitable preparation.

The importance of having the classes graded has been time and again shown to be an absolute necessity, and has been therefore adopted in the best schools in this country and abroad.

If the number of medical schools in the United States could be limited by law, and only located at large centers of population, where the inestimable advantage of practical clinical and laboratory instruction could be enjoyed to the fullest extent by all the students equally, who attend the college lectures, it would be far preferable than to have so many small and half organized schools in different isolated localities.

I must now refer to one of the worst evils growing out of this loose system of medical education. I allude to the fact that medical diplomas and degrees are openly bought and sold, and the public have no way to distinguish between the quack, who is an unscrupulous and ignorant pretender, and the educated and skillful physician.

Imposters, quacks, and unprincipled adventurers who have failed to pass the required examinations either in America or Europe, or whose dishonorable acts ought to lead to their expulsion from all decent society, buy these

Digitized by Google

"Cheap John" diplomas, assume the title of physician, and enter upon the practice of medicine on an equality with respectable physicians.

As long as this pestilent abuse continues to exist, and it will so continue until it is blotted out by the strong arm of State law, there is little hope of soon regaining that hold upon public confidence and popular respect which has been lost to the regular profession, as the price of its inexcusable and shameful abuses.

For all this where can we find the remedy? It is obviously both impossible and impracticable under our governmental system to have general legislation applicable to this important subject; to have the kind of preparatory examinations defined; the proper arrangement of the curriculum; the course and length of study; or to appoint and control Examining Boards, before whom all applicants for license should appear for examination before being allowed to practice. But it appears to be entirely competent and feasible for the Legislatures of the several States to enact such laws as are necessary to protect society against empiricism in all its forms, and especially against these irresponsible medical outcasts, who are merely Bashi-Bazouks armed with fraudulent diplomas as letters of marque to prey upon human life.

Dr. N. S. Davis, in his "Special Report to the United States Bureau of Education," in alluding to this subject, says: "This unfortunate tendency of our experiment in permitting the freest rivalry in the establishment of medical schools, results directly and necessarily from the fact that the degrees they confer and the diplomas they give have been permitted throughout the whole country, with only a few temporary exceptions, to have all the force and effect of a license to practice medicine. It requires but a moderate familiarity with the motives that govern human actions, to see clearly that in a country where there are no entailments or estates, and where the great body of young men who seek the professions are without pecuniary fortunes, and largely dependent on their own industry for the

Digitized by Google

means of education as well as reputation and fortune in after life, the question, 'Where can I get the Degree of Doctor, which is equivalent to a license to practice, and a full admission into the ranks of the medical profession, in the shortest time, and consequently with the least expenditure of time and money?' exerts a very great if not controlling influence in determining where the student shall attend his college instruction. Not that medical students are a whit less conscientious in their desire to fully qualify themselves for the responsible duties of our profession than those who seek any other calling in life, but present necessity, or even convenience, easily controls when there comes with it the flattering thought that, at another time, after having earned a little money by practice, all deficiencies can be supplied by a season of reviewing in a school of the largest facilities.

"Just on this half unconscious delusion hundreds are induced to go where the requirements in time and money are least, regardless of all other advantages. The medical college in a country village, remote from all facilities for clinical instruction in hospital or dispensary, and but scantily supplied with subjects for dissection, can issue to its graduates just as large a diploma, couched in just as intelligible Latin, and having much the same influence with the people as the school in the metropolitan city, whose students can have the largest facilities for clinical and practical study. Hence it is not strange that, before the end of the seventh decade of the first century of our existence as a nation, about forty medical colleges had been organized, only sixteen of which were so situated as to afford their students any proper facilities for clinical instruction, and that those sixteen were resorted to by a little more than one third of the whole number of those who attended medical colleges.

"The general acceptance of the college diploma as full admission into the profession, thereby uniting in the heads of the same men the business of teaching and the power of

Digitized by Google

TON MEDI

D501.8 M

licensing, has continued to the present day. It is wholly responsible for the fact that, while we have sixty-four medical colleges to-day, one third of them are so located that they can afford their students no advantages for clinical instruction worthy of mention; and all, except three or four, still attempt to crowd instruction in all the departments of medicine upon the attention of mixed or ungraded classes, in annual college terms of from sixteen to twenty weeks, and exact only two such strictly repetitional courses for graduation.

* * * * * * * * * *

"Let the only question presented to the mind of the student, when choosing the college he shall attend, be, where can he most certainly obtain that amount and variety of medical knowledge which will enable him successfully to pass the examination of an independent Board of Examiners, acting under liberal and proper rules and modes of testing the student's knowledge? and we shall have nothing to fear either from the number or rivalry of our medical schools."

So writes Dr. Davis, one among the best authorities in this country. And in a recent number of the "Medical Record" (of New York), in indorsing and commenting on the above, we find the following, viz:

"As Dr. Davis very justly observes, the general acceptance of the college diploma as a full admission to practice, is wholly responsible for this deterioration. On the contrary, if there were State Boards of Examiners, independent of college faculties, who should grant licenses to practice only upon thorough examination, the case might have been entirely different, and these would have created a censorship dreaded at once by the candidate and by the college presenting him. For the candidate there would have been the risk of rejection; for the college, the loss of repute, consequent upon a too large percentage of such rejections. The duty that the American Medical Association has before it, therefore, is to press in every State for the creation of

Digitized by Google

such Boards, and for a uniform standard to be adopted by them."

This line of argument alone is sufficient to prove the necessity of State Boards of Examiners, with authority to go behind diplomas or certificates of graduation, and make inquiry into the qualifications of all persons who undertake to help a sick person get well.

Without such authority, a Board of Examiners is of but little practical use. If reckless and incompetent teachers, under the guise of medical colleges, shall persist in the crime of annually turning loose upon society gangs of medical bushwhackers, to trifle with human life, then society must be protected by a law strong enough to set aside any medical diploma when held by a person who cannot pass muster before a regularly organized State Board of Examiners.

We undertake to exclude from the profession all who have not regularly graduated from some chartered medical college, or who have not passed examinations and obtained licenses. That rule might, perhaps, exclude some who had acquired sufficient medical knowledge to enable them to successfully practice. How unjust to them, as well as dangerous to the community, is the admission into the profession of incompetent persons, for no other reason than that they are protected by letters patent in the shape of a diploma.

Digitized by Google

SUPPLEMENTAL REPORT ON MEDICAL EDUCATION.

BY J. BRADFORD COX, M. D.

When we see men ignorant of the first principles of anatomy, physiology, chemistry, therapeutics, pathology, etc., gaining a livelihood—yes, even obtaining a competency—by the "practice of medicine," we may well ask the question: What is the necessity for any medical education?

If empiricism and mystery are enough, why wade through years of study and research to gain a knowledge of how and when to administer a remedy? If by accident we learn that a substance taken into the stomach purges, or produces emesis, why investigate as to the reason for such a result? The simple fact that such is the result is all the knowledge that many of our patients care to have on the subject, and all that some of them deem necessary on the part of their physician. Even this much knowledge is not thought necessary by many intelligent persons, for they are willing to risk all to the mystery of infinitesimals and the dynamics of vitality. If it be true that the age of mystery is giving way to one of exact knowledge; if the truths of science, the laws by which nature works, are superseding that supposed knowledge which is the result of isolated experiment, conjecture, and theory; then will an answer to my question be apparent. Assuming that this is the case, and that we are advancing in a knowledge of medicine and all that pertains to it, I will offer a few thoughts on the subject assigned the committee of which I have the honor of being a member.

I wish to consider the subject from my own standpoint, and will not expect the other members of the committee to concur in what I may say, unless it meets with their ap-

Digitized by Google

proval. The subject, in its broadest sense, will include all acquired knowledge of medicine from whatever source it may come. I do not propose to lead you back to classic times, to consider the origin, progress, etc., of medical schools, although this would be pleasant, but desire to view the subject from a more practical standpoint. For this purpose I will consider—

First—Preparatory or collegiate education.

Second—Preliminary medical education.

Third—Practical medical education.

In the first division of the subject I include a thorough preparatory education before entering upon the study of the collateral branches of medicine. In the second, the study of these latter up to the time of graduation in medicine. In the third may be included all the knowledge gained after commencing practice. This latter may be obtained from two principal sources, viz: personal experience, and from consulting the views of others, either orally or by means of books, journals, etc. I call this latter, practical education, because many physicians never seek knowledge from these sources, unless it be for immediate practical use.

As to the first two divisions of the subject, preparatory and preliminary medical education, there is a great variety of opinion concerning the amount of knowledge necessary to entitle a student to enter and graduate at a medical school. That some attainment in general education should be required of every student before commencing his medical education, all will admit. How much should be required is not well settled, students being permitted to enter some medical colleges, especially in the United States, without even a common school education. But in such cases the act is condemned by the profession, and the tendency is perhaps towards requiring of each matriculate evidence of academical knowledge.

The "General Council of Medical Education and Registration" in England, which held a meeting during the present year, was of opinion that, unless a youth has acquired a fair amount of general knowledge, precision of thought,

Digitized by Google

and habits of industry, at the period of commencing professional education, it is doubtful whether he will ever do so. The following resolution created an animated discussion, but was finally passed by a majority of nine to seven—seven members not voting:

Resolved, That it is not desirable that any university of the United Kingdom should confer any degree in medicine or surgery, whether that of Bachelor, Doctor, or Master, upon candidates who have not graduated in arts, or passed all the examinations required for a Bachelorship in Arts, or passed, after a due course of education, such as are *bona fide* academically equivalent to those required for a degree in arts.

Since the function of this General Council seems to have been only advisory, and since the English Government is slow to act, and for other reasons, we cannot expect to see immediate results from this recommendation, unless we, on this side of the Atlantic, take up the subject in our usual practical way, and profit by what the leading medical institutions of Great Britain have suggested.

That it would be to the best interests of the profession in the United States for all medical colleges to require of each student evidence of a certain specified preparatory education before matriculation, no one will deny. But can this be done—and how? are questions which must be first settled. It can be done when public opinion has reached that point which enables it to say, "it must be done." This point has, perhaps, not yet been reached, and the question as to how, resolves itself into one of elevating public sentiment, both among the laity and the profession, to the required standard. This can be done in various ways. Each individual member of the profession can do much to hasten the event. Lest I should seem arrogant in attempting to say how you may do this, I will only call your attention to the action of the American Medical Association on the subject, to the effect that no practitioner should act as preceptor to any medical student who has not acquired an education equivalent to a degree in arts. In addition to this, I will

Digitized by Google

venture to say that those colleges which require a preparatory examination, or evidence of academic knowledge, should be encouraged by advising students to matriculate there in preference to any other college.

That these views are unpopular with some, I am well aware; but that they are popular with a majority of the profession, cannot be doubted. Such a reform would not necessarily diminish the supply of medical students to the various colleges. It would only be the means of selecting the students from better material—from a class better educated. The law of supply and demand would still govern as to numbers or quantity, while the quality would be much improved. I invariably refuse to act as preceptor to any student who fails to fill this standard.

This brings me to the second division of my subject, or preliminary medical education. A committee appointed by the General Council of Medical Education and Registration, to which I have already alluded, sent circular letters containing questions respecting the results of professional examination and deficiencies in preliminary education, to the various licensing bodies. The answers received were voluminous. They emanated from the Universities of Oxford, Cambridge, Edinburgh, Glasgow, and Aberdeen; from the Colleges of Physicians of London, of Edinburgh, and of Ireland; from the Apothecaries' Society of London, and Apothecaries' Hall of Ireland; also, recommendations from the Conference of the Representatives of the Colleges of Physicians and Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow. Surely, answers and recommendations from such bodies, made with deliberation and a view to elevate the standard of the profession, are entitled to great weight, and if properly compared and analyzed, would add much to the elucidation of the subject of medical education. The committee which addressed the circular letters to the licensing bodies, in their report suggest that the efforts of the Council must be directed, not to lower the standard of the examinations, but to raise the standard of education of the candidates. The committee

Digitized by Google

further states that the attainments of the candidates have increased during the last ten or fifteen years.

Several of the licensing bodies express the opinion that the period—four years—of professional study, is insufficient. The College of Surgeons of England is not prepared to say that students of average intelligence and fair industry cannot, within the time now generally allowed, qualify themselves to pass their examinations. The College of Physicians of Edinburgh would not be prepared to make the extension of the period of study obligatory. The College of Surgeons of Ireland regards the four years to be amply sufficient. The University of Aberdeen, College of Physicians of Ireland, and Apothecaries' Hall of Ireland, think the time allowed would be sufficient, if the full period of four years were well employed.

Thus we have the views of the leading medical institutions of England condensed. Could they have expressed their views as to our "two full courses of lectures," etc., it is evident that the decision would not have been flattering to American colleges.

After several days deliberation, this Medical Council arrived at the following conclusions concerning graduation, and the qualifications necessary to entitle a practitioner to the benefits of registration, viz:

First—That it is desirable that the different licensing bodies, whether singly or in combination, should frame their examinations so as to secure that the knowledge of every practitioner whose name appears on the register shall have been tested in all the subjects of professional education which the Council has determined to be essential, viz: 1. Chemistry, including Chemical Physics (meaning thereby heat, light, and electricity.) 2. Anatomy. 3. Physiology. 4. Materia Medica and Pharmacy. 5. Pathology, including Morbid Anatomy. 6. Medicine, with Medical Anatomy, Clinical Medicine, and Therapeutics. 7. Surgery, with Surgical Anatomy and Clinical Surgery. 8. Midwifery. 9. Forensic Medicine.

Digitized by Google

Second—That there be in future three professional examinations.

Third—That the professional examinations be arranged in two divisions. The first division may be completed at or before the close of the second year of professional study, but the second division not till the expiration of two years after the passing of the first division, nor before the completion of the fourth year of study; that the examinations and the subjects included in each be such and in such order as to insure as far as possible a due continuity of study; that the first division of the examination shall include the following subjects: 1. Chemistry and Chemical Physics. 2. Anatomy. 3. Physiology. 4. Materia Medica and Pharmacy. That the second division shall include the following subjects: 1. Pathology, including Morbid Anatomy. 2. Medicine, including Medical Anatomy, Clinical Medicine, and Therapeutics. 3. Surgery, including Surgical Anatomy and Clinical Surgery. 4. Midwifery. 5. Forensic Medicine.

Fourth—That it is desirable that an examination in the earlier subjects of professional study should take place before the end of the first year of professional study.

Fifth—That the professional examinations be conducted both in writing and orally, and that they be practical in all in which they admit of being so.

Sixth—That not less than two examiners shall take part in every oral and clinical examination.

Seventh—That the questions to be answered in writing should be submitted to the whole body of examiners for consideration, and if desirable, revision, before being proposed to the candidates.

Eighth—That the written answers should be submitted to more than one of the examiners.

Ninth—That excellence in one or more subjects should not be allowed to compensate for failure in others.

The following recommendation was adopted without discussion, viz:

Digitized by Google

Resolved, That it be recommended that in no case should the examination of a candidate by any of the licensing bodies, in any subject, be conducted wholly by the lecturer or teacher in that subject in the school in which the candidate has been educated.

I have quoted thus largely from the proceedings of this Council, for the purpose of comparing requirements in England with our own. Although the machinery of government is different in the two countries, the objects to be attained are the same, viz: the welfare and happiness of the people.

The Romans believed in the right of the State to supervise the physical development of their youth as well as the intellectual culture of the same. The English seem inclined to profit by this principle, at least so far as the soldiery of the government is concerned. Very few of the many educated medical gentlemen, subjects of the queen, are deemed competent to have charge of the physical condition of those who are called upon to defend the government in the struggles of the battle-field. Graduates in medicine and surgery, after their four years course in the universities, enter the Medical School for the Army, Navy, and Indian Service, as students, and are instructed in Military Medicine, Surgery, Hygiene, and Pathology, before being permitted to assume the responsibilities of the special duties afterward to rest upon them.

If Great Britain has acted wisely in caring for her soldiers, is not the example worth something to other nations? Has not every family the right to demand that its medical adviser shall attain to something near the standard required by the English Government? Is not the preservation of the family's health of as great importance as that of the soldiery?

No educated practitioner of medicine and surgery in the United States will deny the assertion that the physical ailments of the great mass of our population are but poorly and imperfectly cared for. In the sparsely settled districts and in villages and smaller towns, it is almost impossible to

Digitized by Google

procure intelligent medical and surgical assistance when it is most needed. To meet this demand, let the entire profession unite in sustaining those colleges only which are working for reform in this direction by extending the time of preparation to three or four years of lectures, and which have lengthened their courses of lectures.

One cause of most of the so-called reforms—*i. e.*, where a practitioner takes up with any of the one-idea would-be systems of practice—is that their original medical education was superficial, and a failure was the result, and in order to make a livelihood they have cried reform, and embraced an idea still more superficial than their partial education, because it required less study and exertion.

The more studious of those who originally start in to master any of the pathies or isms, if energetic, soon go beyond their narrow confines which some delight to call a system, and embrace rational and scientific medicine. Hence the tumult which some of the followers of a pathy are creating at present in New York and London, a Dr. Wyld being the leader in the latter place.

This brings me to the last division of my subject, or practical medical education. The practitioner who concludes that because he has graduated in medicine there is nothing more to learn, is indeed to be pitied. Failure is written across every such case. As before intimated, the knowledge acquired from consulting the views of others, either orally or written, and that which we gather from personal observation, is or should be more highly prized than mere theoretical knowledge, such as is usually obtained in the colleges, and especially such as is obtained from colleges which seem to view the subject of medical education from the standpoint of dollars and cents, losing sight of the dignity of the profession.

Some practitioners depend entirely upon such knowledge. They gain no practical knowledge. They stop study on leaving college. They seldom consult the views of others on the cases they may be called to treat. In other words, graduation is the climax of their lives personally. They

Digitized by Google

enter upon the down grade from that time. They shut out all light that shines on them from actual practice. They look only on the surface of cases falling under their care. It is only by going to the bottom of every case, seeing what it is, discovering its pathology, if not able to see it ourselves, asking others, in one of the ways indicated, that we can progress. Many of the failures in our profession result from a want of proper appreciation of this latter kind of knowledge.

As a means of promoting practical medical education, medical literature should be encouraged. Books and journals should be more plentiful, and at such prices that every practitioner could be well supplied. Local societies should be organized in every town where half a dozen or even a less number of physicians could be brought together. A friendly, congenial, and fraternal feeling should exist between members of the profession everywhere.

Digitized by Google

REPORT ON PUBLIC HYGIENE AND STATE MEDICINE.

BY F. W. HATCH, M. D.,
CHAIRMAN OF THE COMMITTEE ON PUBLIC HYGIENE AND STATE MEDICINE.

MR. PRESIDENT, AND GENTLEMEN OF THE STATE MEDICAL SOCIETY: Complaint was made by my predecessor, the Chairman of this committee for the last year, of having been deserted by his associates, and compelled to make up a report out of the resources within his own command. I find myself, Mr. President, in the same position; about to assume the grave responsibility of speaking of the sanitary condition and considering the sanitary interests of the State. My associates, when they contemplate the failure which may possibly attend my efforts, may at least enjoy the satisfaction of exclaiming, with Macbeth, "Thou canst not say I did it."

One of the first subjects that presents itself, upon reviewing the sanitary condition of the State during the past year, is that of epidemic disease; and we have cause for congratulation that the epidemic of smallpox, which for more than twelve months prior to our last session had raged with fatal virulence in the metropolis of the State, and later in at least one other locality, has now ceased its visitation. And this congratulation is all the more encouraging since we recognize in the fact a renewed evidence of the triumph of sanitary precautions faithfully and diligently enforced, and the efficacy of vaccination well performed. That smallpox, then so prevalent in the great center of population and trade, was stayed in its progress and confined to so few localities, can only be ascribed to the prompt and efficient adoption of measures for its limitation.

The only epidemic of serious consequence, of which the past year has been the witness, is diphtheria. This disease, commencing almost simultaneously with the smallpox nearly two years ago, has spread over a much greater area of the

Digitized by Google

State than any other epidemic disease, since its settlement by its present inhabitants. It has not confined its ravages to the large cities, the centers of commerce, and where especially the specific as well as common causes of zymotic diseases are supposed to abound, but has reached to the smaller towns and villages, the little settlements of the country, and even, in some striking instances, brought dismay and sorrow into dwellings so isolated in respect of masses of population, so free from prominent or even apparent insanitary surroundings, as to have been imagined exempt from the danger of its visitation.

The question of causation, therefore, its mode of origin, and the means by which it has been so widely and in some respects so strangely disseminated, is one of great interest, to which it is proposed presently to devote a portion of this paper.

Of the other serious epidemic (zymotic) diseases, scarlatina has been the only one prevailing to any extent, and this only in a few localities. It cannot be said to have been really epidemic in more than three or four sections of the State—at Downieville, from January to June 30th, 1877; in and about Yreka, Siskiyou County, and in Shasta County, towards the close of the year 1877 and extending on to January, 1878; in Colusa County about the same time.

In the last mentioned locality it appears to have been generally mild, though some cases are reported as having been attended by grave symptoms. In Shasta and Siskiyou the accounts which have reached us represent it as having been extensively prevalent, and with a moderate fatality. Twelve deaths were reported by Dr. J. B. Robertson, of Yreka, in January, 1878, out of sixty-six cases; four deaths by Dr. C. M. Hill, of Ætna Mills, in the same county, out of thirty cases. No theory is advanced as to the origin of the disease in any of the above localities.

Considering the entire class of what are usually regarded as zymotic diseases, we find the mortality in eighteen localities to have been 2,216, as represented in the following table. In it are embraced most of the largest cities and towns in the State:

Digitized by Google

TABLE OF MORTALITY BY ZYMOTIC DISEASES IN EIGHTEEN LOCALITIES, 1877.

DISEASES.	San Francisco	Sacramento	Stockton	Petaluma	Marysville	Placerville	Los Angeles	Watsonville	Santa Cruz	Folsom	Santa Barbara	Downieville	Antioch	Cloverdale	Ventura County	San Mateo County	Winters	San José	Under five years of age	
Cholera morbus	10	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	1105	San Francisco.
Cholera infantum	122	12	3	1	0	0	2	0	0	0	0	2	1	0	4	7	0	0	55	Sacramento.
Diarrhea	28	0	1	1	1	0	2	1	0	0	1	0	0	0	0	1	0	0	15	Stockton.
Dysentery	9	1	2	1	1	0	13	0	1	0	0	0	1	0	1	0	0	0	17	Petaluma.
Smallpox	140	0	0	0	0	0	0	96	0	0	0	0	0	0	0	0	0	0	23	Marysville.
Measles	14	0	1	0	5	0	1	0	0	0	0	0	0	0	0	0	0	0	13	Placerville.
Scarlatina	25	0	2	0	0	1	6	0	0	0	0	3	1	0	0	0	0	0	101	Los Angeles.
Diphtheria	794	36	13	22	0	26	50	12	32	4	20	0	5	19	27	11	0	30	8	Watsonville.
Croup	91	4	3	3	1	0	1	0	1	0	0	0	0	0	1	2	0	3	16	Santa Cruz, 11 mos
Whooping cough	26	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	Folsom.
Erysipelas	16	2	0	1	2	0	0	0	0	0	0	0	0	0	0	0	1	0	9	Santa Barbara.
Fever — typhoid and typho-malarial	196	9	7	4	3	3	22	7	5	0	0	1	3	2	4	2	3	7	5 4 7	Antioch. Downieville. Cloverdale.
Fever—malarial	22	4	1	0	8	0	8	0	0	2	0	0	0	0	0	0	0	0	21	San José, 5 mos.
Fever—cer-spinal	28	8	0	0	0	0	1	0	1	0	0	0	1	0	4	0	0	0	20	Ventura County.
Alcoholism	28	3	2	1	5	0	4	0	1	2	0	0	5	0	0	2	0	0	17	San Mateo County.
																			1	Winters.
Totals	1549	88	36	34	26	30	206	20	41	8	21	6	18	21	41	27	4	40	1408	
Deaths in each 1000 of popl'n (est'd)	5.1	3.6	2.7	5.6	5.7	6.0	12.8	6.6	8.2	5.3	3.8	5.0	13.0	7.0	17.0	9.0	5.0	.....		

Digitized by Google

Thus we find that in San Francisco there died during the year 1877, 1,549 persons, of the zymotic diseases alone; of these 1,105 were under five years of age, or 5-16 in each 1,000 of population, estimating the latter at 300,000. In Sacramento 88 deaths, and 55 under five years of age, 3.66 in each 1,000. In Los Angeles, 206 deaths, and 101 under five years, 12.8 in each 1,000.

Without extending the review more minutely, we are confronted with the fact of an aggregate of 2,216 deaths by what in the present day we are accustomed to regard as preventable diseases; 5.4 in each 1,000 of the population represented; 1,408 infants under five years of age, a large proportion of whom were sacrificed to neglect—victims to conditions which, according to the almost universal testimony of the profession, are within our control. Of these 2,216 lives, diphtheria claimed 1,101; cholera infantum, 154; typhoid and typho-malarial fever, 283; alcoholism, 53; smallpox, 236—1,827 deaths from these five causes alone, whose intimate connection with insanitary conditions, with dampness, with filth in one or another form, with imperfect drainage, with foul sewage and its gasses, with a disregard of sanitary laws, few at the present day will deny.

It is proper, Mr. President, that these and similar facts should occasionally be brought to the notice of the profession; that we should, at least once a year, be confronted with the work of death in our midst. Scattered over different sections of the State, isolated to a great extent one from another, we have ordinarily no means of knowing what is going on beyond our own limited circle. Perhaps the recital of the few facts just alluded to may awaken reflections not only profitable to ourselves, but resulting in benefit to those dependent upon us as the guardians of health.

Of the causes of mortality to which reference is made, diphtheria stands prominent above all others—in fact exceeding all others combined—1,101 deaths out of a total of 2,216; and yet there are few facts in medicine which the investigations of modern authorities have more fully deter-

Digitized by Google

mined than that of the dependence of this disease upon causes which, under a proper sanitary system, might to a very great extent be avoided. If to the above we add the deaths by croup, which, occurring in localities where diphtheria was at the time prevalent, were probably of a diphtheritic character, 110 in number, we have a total of 1,211 deaths by diphtheria out of 1,549 by all zymotic causes, or 78 per cent.

Smallpox is reported from only two localities—San Francisco and Los Angeles. In the former it ceased in July, in the latter, in June. Peculiar circumstances seem to have favored the dissemination of the disease in each of these localities. In the one—San Francisco—the Chinese population; in the other, the native Spanish or half-breed population. In Los Angeles it was almost, yet not entirely, confined to this class, and their habits and mode of living favored its propagation among them. It was generally fatal, yet they almost universally declined the proffered services of the Health Officer, and obstinately refused to submit to vaccination. There is a strange idea existing among them, that it is fatal to be vaccinated during the prevalence of an epidemic of smallpox, though at other times they are both willing and anxious to avail themselves of the protection it affords.

Of the 96 deaths by variola in Los Angeles during the year, 66 are reported as being "natives."

From the exanthematous and other common diseases the mortality has been quite insignificant. Measles claimed only 21 victims; scarlatina, 36; whooping-cough, 35; a total of 92. Typhoid and typho-malarial fevers are responsible for 278, and cerebro-spinal fever for 43, while as a sad commentary upon the habits of our population, alcoholism is set down for 53, only three less than scarlatina and measles combined.

In the diarrhœal diseases the mortality record exhibits a gratifying decrease. The deaths by cholera infantum are

Digitized by Google

given at 155, in the 18 localities; in 1876 they amounted in the same towns and cities to 188.

While these statistical facts possess a deep interest in relation to the diseases and mortality of the past year, the question of etiology is of paramount importance in a practical and hygienic point of view. This is especially true of diphtheria. To discover the causes of disease, is indeed at all times one of the most interesting problems in medicine, but especially so of those diseases which, usually classified under the general head of zymotic affections, are regarded as being more or less preventable.

It is unfortunate that there should be any difference of opinion as to the propriety of this classification; that some should still entertain the belief that the deposit upon the mucous membrane, which we are accustomed to regard as the characteristic sign of diphtheria, is anything more than the expression of a local inflammation, rather than of a specific constitutional disorder; that there should be any doubt as to a certain more or less intimate dependence upon unsanitary conditions; that we should still hear expressions of incredulity as to its contagious or infectious character, notwithstanding the mass of evidence which has accumulated to sustain it.

The principles of medicine are in some respects unlike those upon which we rely for evidence in other sciences. Many of the doctrines in which we firmly believe are not yet susceptible of that clear demonstration which is applicable to other subjects. Yet even in medicine there are many things which carry conviction to the mind, even though the proof by which this conviction is sustained be not mathematically exact.

These general principles apply forcibly to diphtheria or to the position which this formidable malady occupies in medical belief. The specific character of diphtheria, its constitutional nature, the subordination or dependence of the local deposit upon an antecedent or concurrent systemic poisoning, are doctrines, for example, the validity of which, though the latter position is controverted by high author-

Digitized by Google

ity, is admitted by the great mass of the profession of the present day. Yet what is the evidence upon which this belief is predicated?

In the clinical history of diphtheria we recognize the almost constant association of constitutional symptoms with those that are local, sometimes simultaneously, but usually preceding the latter by a greater or less interval. The child is restless or drowsy, more or less feverish, perhaps, or in the absence of the latter, exhibits a degree of debility amounting at times to prostration quite disproportionate to the other symptoms of the disease, or to the local exudation when it appears. It is true that this local exudation in some cases apparently precedes the development of the constitutional affection, but this may be apparent only. Certainly, in the large majority of cases, the history affords evidence of some general disturbance prior to the discovery of the local deposit. On the other hand, we doubtless find many cases occurring during an epidemic of diphtheria, in which there are all the constitutional symptoms, the profound debility, and even the consecutive paralysis, without any true diphtheritic exudation having been observed. These cases are analagous to what is sometimes seen during an epidemic of scarlatina, the *S. sine eruptione.* How often do we see diphtheria attack one or more members of a household in its most characteristic form, while others of the same family are simultaneously or successively sick, weak, prostrated, with redness of the pharyngeal region, but without any true exudation? Is there any greater reason for doubting the identity of these cases, than that of the anomalous cases of scarlatina just alluded to?

The discovery of albuminuria will add yet stronger evidence in favor of the constitutional character of diphtheria, and the yet further fact that, although we may remove or utterly destroy the exudation in its original seat, we often fail to cure the disease—to remove the constitutional infection. Some of its habits serve besides to give force to the idea of the constitutional nature of diphtheria; as, for instance, its implication of different parts of the body even

Digitized by Google

in the same case—the throat—the abraded skin—the vagina.

We may know it by the company it keeps, its association with other epidemic diseases—with typhoid fever, scarlatina, and measles. It is true that Oertel has ably argued in favor of the local origin of diphtheria, believing that the fungus or micrococcus which is its germ, is arrested in the fauces, and there produces effects at first local, but which afterwards become systemic. Dr. Geo. Johnson ("London Lancet," 1876), entertained similar views as to its local character, comparing the effect of the poison of the disease upon the mucous membrane, with that of the application of cantharides upon the skin. Yet in addition to the objections already urged against this theory, there may be added the rapidity with which death ensues in many cases—twelve, twenty-four, thirty-six hours—with little or no membranous exudation; the early toxæmia observed in some cases; the absence of any valid reason why the mucous membrane of the fauces should alone be affected, and not other mucous surfaces possessing a similar histological character; its epidemic character; and, as we hope to be able to show, its contagious and infectious nature.

The specificity of diphtheria is sustained by microscopical investigations—by the detection of certain fungi peculiar to this disease. Thus, Nassiloff, referred to by Wagner (Pathology, p. 267), has constantly detected fungi "in diphtheritic membranes, and on the borders of the changed parts in the epithelium, even where no membrane has yet been formed; they penetrate deeply into the tissues following the passages of the juices and lymphatics." He found on the nose and throat of a diphtheritic person "brown masses consisting of fungi. Here and there, especially in the mucous and sub-mucous tissue of the larynx in another case, the plasmatic canals of the connective tissue as well as the lymphatics, were filled with fungi." He and others have successfully inoculated the disease into rabbits; and the pages of medicine afford melancholy examples of the same process having been successfully but accidentally accom-

Digitized by Google

plished in the persons of some of the most distinguished observers, as the sad fruit of professional devotion.

Nassiloff, as the result of his investigations, considers the development of the fungus to be primary in the disease, and the cause of the necrosis. Buhl recognized the existence of a general infectious disease entirely independent of any local affection; he saw in it only the evidence of a general infection, manifesting itself upon the tonsils, uvula, etc.

Oertel discovered in the diphtheritic membranes, the subjacent diseased parts, and even the blood, great numbers of vegetable organisms, to which he gave the name of "micrococci." He thinks, as just now stated, "that it begins as a local disease, and develops afterwards into a general one; and that, moreover, the general infection is kept up by the local one. The disease establishes itself first in one spot, the focus of infection, and thence radiates, as it were, through the body, until by general blood poisoning it renders the organism incapable of life." Speaking of inoculation, he says: "The mass of micrococci developing in the body of the animal forms the criterion for the severity of the disease, and an exact indication of the virulence of the diphtheritic contagion." (Zirmssen, Vol. I, p. 590.)

Bretonneau, in 1821, in his early comments upon diphtheria, described it as a local disease, communicated by contagion, through inoculation, or by contact of the diphtheritic secretion with the mucous membrane, and not through the atmosphere. Subsequently, after more extended observations, he avowed his belief in a general infection—that blood poisoning was one of its essential conditions. However this may be, whether the disease is primarily constitutional, or only secondarily so, through absorption of a local infection, the specific nature of the disease and its cause is equally established.

The same facts bear directly upon the question of the contagiousness of diphtheria. It has been admitted by almost all authorities to be specific. It has, as we have seen, been inoculated; it is capable of being developed in

Digitized by Google

an individual by the accidental contact of the exudation upon the mucous membrane, as shown in the unfortunate results just alluded to — the cases of Webber, Blache, Valleix, and others. The important practical question is, as to its communicability by other ordinary means. We may derive some basis for the determination of this question from the similarity of its habits, some of which were previously alluded to, with those known of other diseases generally recognized as being contagious. One of these, belonging to diphtheria, is that of occurring epidemically or endemically; the varying intensity of different cases is another; its common coincidence or association with other members of the class; its propagation in succession to several members of a household; its spread among the children of a school, one after another being attacked.

Many striking facts have been recorded bearing upon this question, and others equally so have been the subjects of personal observation. Wertheimber, related by Oertel, records "a case of a person sick with diphtheria, who, living at the time of attack away from home, returned to his family, in which, until then, no disease of that nature had occurred; several days after his arrival another member of the same family was attacked with the disease." Oertel himself relates a case in which "four members of a family fell sick in a few days after the return of a son from college. He was sick with diphtheria at the time, and communicated the disease by kissing." The case of a child visiting the town of Dixon, in this State, having just recovered from the disease, but wearing the clothes which were worn during its sickness, and becoming the source of contagion to a family among whom there had not only been no diphtheria up to this time, but none even in the town or its vicinity, is a case in point. Another instance occurring under my own observation, is that of a child sick with diphtheria, whose two sisters, returning home from a healthy locality in the mountains, where no diphtheria had at any time prevailed, were both attacked with the disease a few days after their arrival.

Digitized by Google

In the report of the Health Officer of the City of Cleveland, Ohio, the case is mentioned of a child ten years of age who was removed from home upon the outbreak of diphtheria, from which three children had died. "Two other sisters, convalescent from the disease, went to the seashore—one, five weeks from the commencement of her illness, and the other only three weeks, but from whom all traces of deposit had disappeared. They left together, and seemed equally well. They were joined by other members of the family, and in a week by the child of ten above mentioned. Early in the following week symptoms of the disease showed themselves in her, and proved fatal."

The weight of recent authority is decidedly in favor of the contagiousness of the disease. Dr. J. L. Smith regards it as being "highly contagious through the breath or by personal contact," being communicated by children upon the streets or in schools.

According to Oertel, "diphtheria, when it has once gained a foothold, becomes widely diffused by contagion. The contagion of diphtheria may be carried through the air or by solid matters to which it has attached itself. It is therefore diffused by the exhalations of the patient, by the air surrounding him, as well as by contact of several objects with the products of the disease." The same author alludes to the peculiar tenacity with which the contagion clings to certain objects, as houses or rooms, the disease being capable of reproduction there after the lapse of months.

Bristowe, one of the latest authorities, defines it as a "contagious disease." In another place he says: "Diphtheria is undoubtedly contagious. The epidemic of 1859–62 was distinctly imported into this country (England) from France. The introduction of a case into a house, or hospital, or other institution containing many inmates, is almost certain to be followed by an outbreak of the disease amongst them; and, indeed, it not unfrequently happens that in this way every child of a large household is swept away." The contagion, he thinks, is for the most part carried by the

Digitized by Google

atmosphere, but that it may also lie dormant in fomites, being communicated by rooms which had contained cases of the disease weeks or months previously. "It may be presumed," he adds, "that the patient is most apt to impart the disease while the membranous exudations are present, but it is by no means certain at what period he ceases to be infectious. Convalescent children—children, that is, who appear to be perfectly well, and have been apparently well for two or three weeks—seem occasionally to have given the disease to others." He has no doubt of the inoculability of the disease.

Roberts likewise strongly indorses the theory of contagion. "The ordinary exciting cause of it," he says, "is a *specific poison*, and the disease is highly infectious and contagious." The contagion, he thinks, is not confined to the exudation, but "unquestionably exists in the breath, and probably in other exhalations and secretions. * * * * After convalescence, a patient may infect another individual for an uncertain time. * * * * The poison clings tenaciously to houses and rooms for a considerable period."

The views expressed above as to the contagious and infectious character of diphtheria, are not such as have been formed in the closet and promulgated as theories. They have been derived generally from observation and experience. The evidence in favor of the doctrine of contagion is of the same nature as that upon which we are accustomed to rely in support of the contagiousness of scarlatina—too strong, certainly, to be lightly regarded, and the instances of its communication from one member of a family to others, or from one person to another, too numerous to be justly attributed to common causes, as of locality and surroundings, affecting all alike. Yet, while it is believed that the contagiousness of diphtheria is well substantiated, it must be admitted that the mode of its transmission remains in doubt, and that the susceptibility manifested to its reception is less than that observed in scarlatina, measles, or smallpox.

It only remains for us to consider the question, whether

Digitized by Google

the history of the disease warrants the belief of its dependence in any degree upon insanitary surroundings? Probably no feature connected with diphtheria is more obscure than this. The disease itself seems to be by no means uniform in its associations. We see it to-day invading the abodes of the poor, and drawing sustenance from accumulations of filth, from atmospheres contaminated by organic effluvia; and to-morrow we are called upon to witness the desolation it has caused in localities where every sanitary regulation is observed, and surrounded by every safeguard which wealth and refinement can supply. It is not surprising, therefore, that the sentiment of the profession should be divided as to the relation of the disease to the ordinary insanitary conditions—such, for example, as sewer gas, tainted drinking water, soil dampness, and the like; and it must be confessed that further facts are needed before the question can be considered settled. It by no means follows, because diphtheria sometimes invades the palaces of the rich, that it is never occasioned by the conditions just enumerated. Sewer gas, for instance, is quite as likely to enter the houses of the rich as the more humble dwellings of the poor. It is an element in the causation of disease, often difficult to detect, frequently inodorous, and dependent upon faults of sewer construction and sewer connection with dwellings, which there is abundant evidence to know, not infrequently escapes all but the most skilled observation, and against which the only security we have is in the honesty and integrity of the artisan.

Perhaps it is too much to say, in the present state of our knowledge of this disease, that it ever does arise directly *de novo* from defects of sewerage. That such defects do lower the vitality and become the predisposing cause of this and other zymotic affections, and therefore render the system of an individual more than usually susceptible to an attack—place it in a condition favorable to its development—there is abundant reason to believe. The same may be said

Digitized by Google

of other kinds of filth—of foul privies, of dampness. But even with this limitation, the relation of diphtheria to the conditions now under consideration, becomes one of vast importance. This is especially so when we consider that this disease is most prone to select its victims among the young—children under ten years of age—that age, in fact, which is well known to be peculiarly susceptible to hygienic or anti-hygienic influences. Of the zymotic infectious diseases generally, it may be said that they abound amid the abodes and avenues of filth and wretchedness; and there are many isolated facts which tend to show, notwithstanding the occasional outbreak of diphtheria under better, cleaner, and more exemplary conditions of locality, that it, quite as much as, or even more than, any other member of the class, seeks by preference places situated upon damp, undrained ground, underground dwellings, the overcrowded tenements of the poor, and wherever impure air prevails. It is in such places that diphtheria generally begins and commits its most fearful ravages. It is amid such surroundings and associations that its greatest fatality is witnessed. That it should spread to others is not to be wondered at when we consider its contagious and infectious character. Indeed, in the case of diseases of this class, it is sometimes difficult to draw the line between cases propagated by the principle of contagion, and those whose origin is in other supposed efficient causes.

In the Report of the Medical Society of the State of Pennsylvania, Vol. XI, Part II, 1877, an instance is related by Dr. L. M. Thompson, showing the apparent dependence of diphtheria upon damp dwellings and the neglect of subsoil drainage. "During several months," he says, speaking of its ravages at Mahoney City, "of the fall and early winter, it was rare that a case occurred outside of two blocks of buildings at the upper and east end of Center street. There was nothing obviously different in the habits and mode of living of the residents of the afflicted spot, from their neighbors, which should confine the disease to, or account for its persistence in, so limited a space. * * *

Digitized by Google

Inquiries were instituted in regard to drainage of the basements and cellars of the houses in the afflicted locality. It was proved that every basement was occupied by one or more families; it was also ascertained that under the floors of the basements there was more or less water. * * * No attempt had been made at drainage artificially, notwithstanding the fact that at the rear end of these lots a stream passed, into which, with little expense, every drop of water could have been carried, and these basements have thus been rendered comparatively healthy. * * * In the opinion that dampness was the cause of the prevalence of the pestilence of diphtheria in this one limited locality, for several months, during which time it was scarcely known in other parts of the town, I was sustained by other physicians whose attention was called to the facts."

The Report of Dr. F. Nickerson, upon the health of Lowell, to the Massachusetts State Board of Health, 1875, is strongly corroborative of the idea above advanced as to the effect of dampness, as a cause of diphtheria, especially when associated with the other factors of foul vaults, defective drains, open and overflowing cesspools, and water tainted with sewage—to which should be added, contagion. The facts are interesting:

"The first cases of diphtheria," the Doctor says, "which were brought to my notice this year, occurred in the last of September, and in October, on Fayette street, near the corner of Chestnut street. Here, in a house on the moist, rich, sloping bank of the Concord, live two families who have no association with each other. Family No. 1 occupies the ground floor on the street. In this family were two cases, one of which proved fatal, October third. The odor from the vault is powerful, and peculiarly nauseating. Behind the house is a damp garden, which is sometimes overflowed by defective drains from neighboring dwellings. In the basement, farther down the slope, in a still damper situation, lives family No. 2, in which were three cases and one death, September twentieth. Under the sitting-room is an unventilated and unlighted cellar, four feet deep, where

Digitized by Google

hens had been kept; a drain passes under the floor of the main sleeping-room. The smell of the vault which adjoins the room in which the deceased child lay sick, was so strong at that time that the Doctor ordered the removal of the patient to another part of the house. Both these families use well water. Farther down the slope, on the very edge of the river, reside an old man and his wife. The latter having attended the deceased child of family No. 2, was taken on the day after its death with symptoms of diphtheria. The overflown garden above mentioned adjoins this house. The vault is cleanly; city water is used. The sewage from these three tenements, as well as from those about to be noticed, passes first into a neighboring cesspool, and then into the river above its surface, where the odor is marked. On the opposite side of Fayette street is a house which was occupied but has been vacated by families A and B. In 1872, there emptied into an open cesspool two feet square, and situated in the cellar, ten sink pipes. The cesspool overflowed so that the cellar was constantly covered with sewage, the odor from which penetrated the house. Family A then consisted of five members, two of whom had typhoid fever, and one died. In family B, which numbered four, three had the same disease, and one died. After this the number of sink-pipes was reduced to two. Family A remained, and was recruited to its original number by the birth of a child. The drain in the cellar was still a very perceptible nuisance, and the vaults were at times very offensive. The father died of typhoid fever last June, and two children died of diphtheria last October. * * * Recently, in some courts a few rods below the locality which I have just been describing, there have been three or more deaths from diphtheria, and several persons are now sick with it. In a certain house there were three cases and one death. Here I found a dark alley, two feet wide, into which sewage was emptying, and passing through the interstices of a crumbling stone wall, into a damp, ill-ventilated, and dark cellar."

Without quoting further just now from this interesting

Digitized by Google

report, it may be briefly stated that it includes an analysis of forty-six cases with seventeen deaths. Among the causes, or combination of causes, which were prominent, defects of drainage included 24 cases; foul vaults, 8; dampness of location or of cellars, 26; probable water contamination, 10; filthy habits or surroundings, 13; probable contagion, 6, in five of which this factor was quite evident.

Even at the risk of wearying the patience of the society, I cannot refrain from adding another brief extract from the same report:

"In house No. 4, on Jewett street, in rather a low situation, lives a family who have had no association with the other families. The land on which the house stands is filled in with six inches of refuse from the city. The family in question occupy two rooms on the ground floor, viz: a sitting-room about thirteen feet square, and an adjoining bedroom about ten by nine. The ceilings of these rooms were completely covered with brown stains, which proceeded from a litter of pups kept by a filthy family above, so that the stench at times was very strong. The sink-pipe discharges its contents on the floor of the adjoining cellar. The sink gutter from the tenement overhead passes over the roof of the piazza, and opens over the sitting-room below, and deposits a strongly smelling water which has worn for itself a hollow three feet from the well. The white paint of the house in the vicinity of the gutter is blackened with the sulphurous emanations. The solid excrements of the dogs, etc., were thrown under the window of the sleeping-room. The well is fifteen feet from the sewage in the cellar, and is covered with boards, on which it was the custom of the upper family to clean spittoons, etc. * * * * The family had lived in the house but a few months before diphtheria appeared, and sickened four out of five persons, one of whom died November twelfth. The fifth was a babe of five months at the breast. Of four women who attended the deceased child through its sickness of five days, one who lives in house No. 5, on Jewett street, was taken with a slight sore throat on Tuesday, November

Digitized by Google

sixteenth. Another, who lives in house No. 6, on Jewett street, was taken sick, and two children followed; no deaths. A third woman, who lives half a mile distant, escaped, but her daughter was attacked on Monday, November fifteenth, with fever, sore throat, swollen tonsils, and white deposits on the latter. The fourth woman, who lives a mile distant, on a hill in a perfectly healthy locality, where there had been no cases of sore throat, was seized on Wednesday, November seventeenth, with diphtheria; a girl four years old, on Monday, November twenty-second; a boy of seventeen years, on Tuesday, the twenty-third; husband had sore throat on Sunday, the twenty-eighth, and also a sister, on December fifth."

The extracts from the report of Dr. Nickerson are particularly interesting as exemplifying the action of several of the supposed causes of diphtheria: 1st, houses built upon land *made* with refuse from the streets of the city; 2d, contaminated well water, as shown by the two separate analyses made by Professor Nichols, the result of one being the discovery of ammonia; "albuminoid" ammonia; organic matter a considerable proportion; chlorine, and a "large amount" of nitrates; 3d, sewage in cellars; 4th, filthy surroundings; and 5th, contagion.

Dr. H. A. La Fetra, Secretary of the Board of Health of the City of Brooklyn, New York, summarizing the results obtained from an investigation of the causes of diphtheria in that city during the years 1875–6, states that—

"The experience of this Board in its treatment of the large number of cases of diphtheria that have occurred in this city during the last two years, has demonstrated to its entire satisfaction that diphtheria is propagated both by contagion and feculent surroundings; in the latter case more especially from the sewer-gases. A number of cases have been investigated—some of them referred to elsewhere—which had their origin in the miasmatic poison escaping from defective closets and broken soil-pipes, the surroundings and circumstances being such as to leave no room for doubt. There are other cases in which it is equally clear,

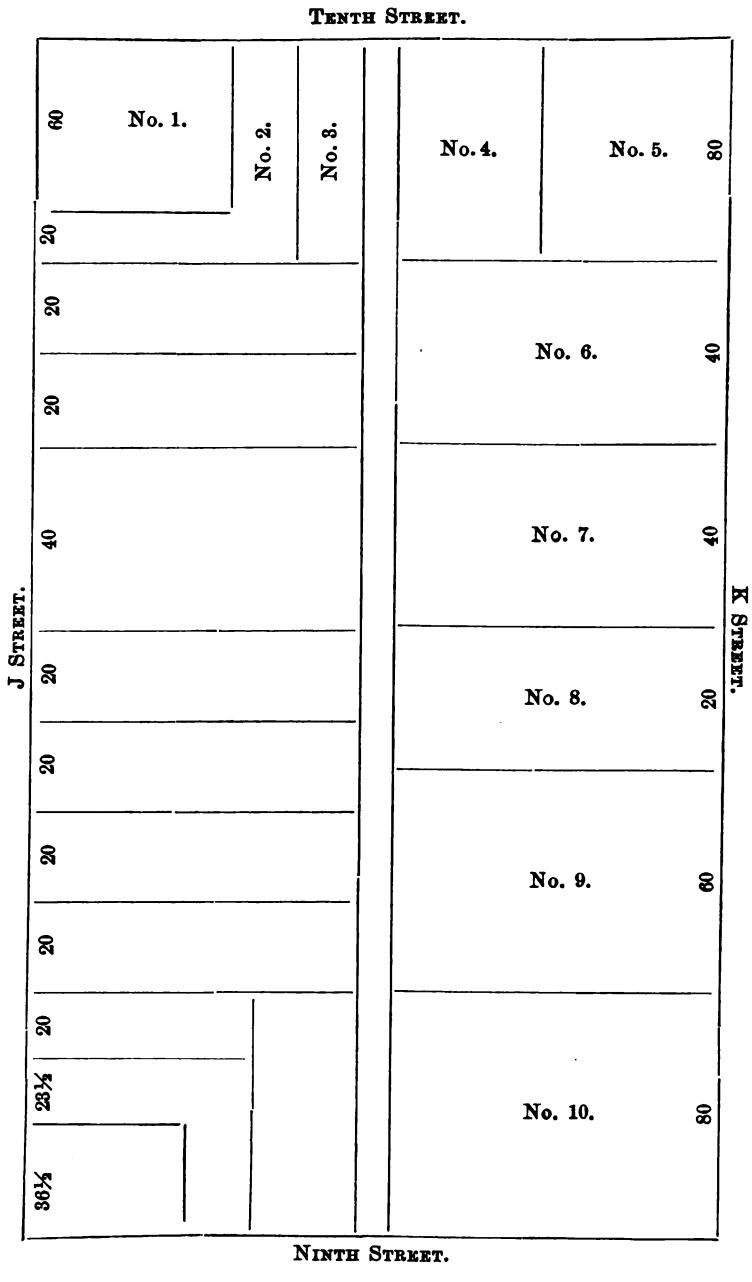
Digitized by Google

so far as a careful observation could determine, that the disease was the result of contagion, the patients not having been subject in their homes to any of the conditions in which zymotic diseases are generated." (Report Brooklyn Board of Health, 1875–6, p. 74.)

I apprehend that, but for the general belief in the theory of *specificity*, as applied to diphtheria, it would be readily admitted by unprejudiced persons, that the facts above related furnish strong circumstantial evidence in favor of the doctrine of the occasional origin of the disease in insanitary conditions. Indeed, Roberts, while subscribing to the general opinion of its exciting cause being a specific poison, adds that: "Some believe that there is a form of this disease not due to contagion, but produced by bad hygienic conditions, especially by drainage emanations."

Not dissimilar facts have been observed in the course of the epidemic of diphtheria in the City of Sacramento. One of these deserves to be referred to. It relates to the occurrence of the disease upon a single block or square, bounded by J and K and Ninth and Tenth streets. The particular localities of the disease may be better understood by reference to the diagram:

Digitized by Google



Digitized by Google

Upon No. 1 is a butcher's shop, with yard attached, where the occupants were said to have been in the habit of slaughtering calves, throwing the blood and other parts of the animals upon the ground. Chickens were also kept in this yard, and the premises were continually uncleanly. In the yard No. 3 was a cesspool, covered by slats, so as to permit the entrance of the slops and refuse from the house. The odor from this cesspool was complained of as being extremely offensive, especially in the evening. In two families living in No. 2 thirteen cases of diphtheria occurred, in No. 4 two cases, with two deaths; in No. 5 there were five cases and one death; in No. 7 five cases, and in the same house scarlatina prevailed immediately after. In No. 10 was a day school for young children, at which a number of children are known to have been taken sick with diphtheria, the teacher having been ultimately compelled to close the school.

This block seemed, in fact, to be for the time an infected spot, in which were concentrated and over which were diffused epidemic influences of a malignant character. Its location is in what has ordinarily been considered one of the healthiest portions of the city. Like other blocks, however, its drainage is imperfect. By the filling up of the streets a central basin has been formed, embracing a surface of about one thousand square feet, and five to six feet deep, walled in upon each side by rows of stores and dwelling houses. Deposits from house closets empty into vaults, those of outside privies into pits of varying depths; drains from kitchens terminate in some instances in cesspools, carrying off the refuse materials which accumulate, while in others these latter are allowed to run out upon the surface, to be absorbed into the earth or dried in the sun.

The location and condition of this block are in some respects not dissimilar to others in the city; but it is probable that the insanitary influences alluded to predisposed

Digitized by Google

the children resident there to the easy reception of a contagion of which the school was the focus.

Another fact tending to establish the influence of insanitary surroundings was observed in Sacramento during the recent prevalence of the disease—its frequent occurrence along the line of the sewer in the southern part of the city. This sewer, a wooden box, for a great portion of its extent either entirely uncovered with earth or only partially protected, in some places leaky, is intended to receive the sewage of the city and convey it to a point convenient for discharge into a drainage canal. It is placed inside the south levee along R street, and its locality is a favorite place of resort for the children in its vicinity, playing upon the sides of the levee, breathing the unwholesome and often offensive vapors which arise from the drain itself and the saturated soil around it, and wading in the water which accumulates in the rainy season, and remains there during the spring and early summer months. The frequent occurrence of diphtheria among the children residing along this and the adjoining streets has been observed by a number of the medical gentlemen of Sacramento, and the fact was deemed worthy of being mentioned in a discussion upon this subject before the "Sacramento Society for Medical Improvement."

Yet another fact which observation has demonstrated, is the far greater frequency of the disease in damp localities, where the soil is saturated with the water and suds thrown from the kitchen, in the lower portion of the city, where the ground is humid, in brick houses resting upon a damp foundation, and plastered directly upon the walls, as is the case with most of the brick structures built at an early day. The walls of these houses, saturated with moisture during the winter, are never thoroughly dried during the summer or dry season. They are always more or less damp, and the plastering in the lower story, and near the ground, generally mouldy, and the humidity of the atmosphere within is quite sensible to one unaccustomed to it.

These things are familiar to the physicians of the city,

Digitized by Google

and are frequently spoken of by those whom they particularly concern. Their agency in the production in some way, either as an exciting or predisposing cause of diphtheria, as well as some other diseases, is unequivocal.

If left to the weight of American authority, there can be no doubt that the question of the relation between diphtheria and insanitary conditions would be settled affirmatively. Dr. Frank Wells, the Health Officer for the City of Cleveland, Ohio, for the preparation of his report for 1876, obtained the written views of a number of the most widely-known physicians from several of the principal cities and colleges of the Atlantic States, a summary of which is given in his report. Some of them may properly be reproduced here. "Professor P. A. Penrose, of the University of Pennsylvania, believes diphtheria is caused by foul air." Professor J. T. Metcalfe, of New York, says "that although he does not consider diphtheria can be developed by ordinary uncleanliness, still it had surely been worse in the *badly-drained* and over crowded part of New York, where it existed as an epidemic." Professor Alonzo Clark refers the disease particularly to the crowded portions of the City of New York, "where, with other sanitary badnesses, the sewerage is imperfect, or does not reach the dwellings, pit privies being used instead of water closets." Professor Francis Minot and C. E. Buckingham, of Harvard Medical College, both regard it as a "filth disease." Dr. F. W. Draper, Registrar of Vital Statistics, Massachusetts, recognizes the fact of the greater prevalence of diphtheria "in localities of well-marked unhealthful character, as to drainage and filth." While in his opinion it is not demonstrated that the poison of diphtheria is generated by filth, "unquestionably filth fosters a predisposition, and once the poison is generated, supplies its nutriment."

Professor Wm. Pepper, of the University of Pennsylvania, also, while not regarding it as properly a filth disease, is "strongly convinced that bad drainage, foul sewers, tainted water supply, etc., do more than exert a depressing influence in diphtheria, as they do in many other diseases."

Digitized by Google

He thinks that these conditions "determine a special virulence and fatality in the disease itself, and, moreover, such an influence on the system as to render it more susceptible to the disease." Professors Budd, Thomas, Loomis, and Lusk, of New York, generally concur in these opinions, while Dr. J. Lewis Smith, of Bellevue Medical College, goes further, and expresses the opinion that there can be no doubt that diphtheria often originates *de novo* from insanitary conditions; the disease he states "to be most fatal and prevalent, in New York, in the poor quarters, where such conditions most abound, especially uncleanliness and privy and sewer gases."

The opinions of the distinguished medical gentlemen just referred to, should naturally have some weight in the settlement of a purely medical question, especially since these views have been formed from observation of the habits of the disease, its frequent, nay, almost universal association with insanitary conditions, and not simply in obedience to what may be considered to be the *fashion* of the times. They are among the leaders, rather than the followers, of American professional sentiment, and are not to be regarded as partial observers.

Dr. Wells also refers, in the report from which the above extracts have been gleaned, to the condition of a number of towns in Ohio, where diphtheria prevailed, showing its relation to the neglect of subsoil drainage, with low, damp localities, broken drains, improper sewerage.

"One fact," says the Report of the Massachusetts Board of Health, 1876, referring to the opinions given by two hundred and four correspondents of the Board, "is impressed on us with great force—that the disease is primarily connected with decidedly insanitary conditions; but that after a certain degree of concentration of the poison has been reached, among those living under bad hygienic circumstances, the best attention to sanitary law will not in all cases protect the more fortunate part of the community who reside in the best parts of towns and cities."

"The conclusions at which we have arrived," the Board

Digitized by Google

says, on pages 533 and 534, "from the facts reported to us by our correspondents, are as follows:

"I. That diphtheria is contagious, and may be, under certain circumstances, highly so.

"II. That it is also infectious, although not to so great a degree as scarlet fever, measles, and smallpox.

"III. That where other circumstances assist, its spread is promoted by dampness or moisture of soil, whether naturally existing, or produced, especially with a tough, impervious subsoil.

"IV. That the special connection between this disease and filth is not so clearly made out, although such a condition would undoubtedly aggravate the bad effects of moisture alone. The subjects of contamination of well water by human filth, and of the air of sleeping apartments by sewer gases, as predisposing causes of the disease, deserve more careful study in the future; our returns do not at present give us sufficient data for the expression of a positive opinion. Some of our correspondents suspected the introduction into the system through drinking-water of some septic influence which gave rise to the disease.

"V. That exposure to dampness and cold, especially among children and those otherwise predisposed to the disease, tend to induce diphtheria.

"VI. That Americans and foreigners in Massachusetts have been about equally subject to the disease, other matters than that of nationality being equal.

"VII. That individual or family proclivity, age, and depression of the vital powers from any cause whatever, are important factors in inducing this disease (as well as others) more rapidly and in a more fatal form, when other causes are also in some degree present.

"VIII. That there is also some atmospheric condition, of which little is now known, the presence of which, even if not necessary, is at least important in the causation of diphtheria."

It is unnecessary to proceed more at length with the literature of this subject. Probably all who have seen much

Digitized by Google

of diphtheria, have observed many cases for which it would be difficult to account, except upon the theory of contagion. It was imported, according to Dr. C. B. Bates, as referred to in the Fourth Biennial Report of the State Board of Health, into Santa Barbara from Los Angeles, spreading to other children of the town, although previously unknown there. It was introduced by importation from Santa Rosa into the Good Templars' Orphans' Home at Vallejo, as clearly stated by the Secretary of that useful institution, sustained by the attending physician, Dr. Anderson.

The case of the two children mentioned in another part of this paper, as returning home to find their sister sick with diphtheria, and themselves taking the disease soon after, and nearly simultaneously, although there had been no exposure, so far as known, to any other cause, and while nothing could be detected in the premises to which it could justly be attributed; the history of its origin at Dixon, already alluded to; the case of another child of fourteen years who contracted the disease while in attendance upon a school at which it was known there were several children attending who had just recoverd from the disease, and that of her sister, a married lady, who visited her from another part of the city, and was soon afterwards taken sick; these and others which have come under personal observation, all point to contagion, with a certainty as strong as very many of the facts to which we are accustomed to refer as demonstrating the contagiousness of scarlatina.

It is true, there are other cases in which the logical sequence is not so clear. Yet such is the case, too, of scarlatina, for the appearance of which in isolated localities we are often totally unable to account.

It is believed, again, that the facts advanced to show the relation between diphtheria and the ordinary insanitary conditions, more especially dampness of locality, although not sufficient to establish the theory with absolute certainty, do warrant the belief that such conditions are capable of promoting the disease, of impairing constitutional resistance to its other causes, and of aggravating the

Digitized by Google

former and increasing its fatality. Yet there are some at the present day who tell us that filth, however noisome, sewers, however foul, sewer gases, however freely they may enter our houses and circulate through the atmosphere of our bedrooms—all these are innocent things!

If the positions taken in this paper are well founded they direct us forcibly to the necessity of certain precautionary measures—to the adoption of certain rules which hygeine has pointed out.

This, after all, is the end and aim of our investigations, without a due consideration of which all the knowledge we have gained of this and other epidemic diseases would be practically lost.

First—Isolation of the sick. It is a fact which cannot be denied that physicians have themselves been too often remiss and careless in enforcing this essential rule.

Yet, if diphtheria be contagious, is it not equally as important as all admit it to be with scarlatina or measles?

Under this rule are to be considered the dangers of the school-room as a source of contagion. It is a fact susceptible of demonstration that not only diphtheria, but other contagious diseases, are often communicated by intercourse in the school and its play-grounds. It seems unnecessary to dwell upon the evidence in favor of the proposition. Concerning the contagious principle of diphtheria, its extreme tenacity has been shown, its capacity to retain its infective power for a considerable length of time, its adhesion to clothing, etc.

If these facts be admitted, does it not become our duty, as guardians of the public safety, to protest against the habit of sending children to school immediately upon recovery from an attack of diphtheria?

It is a rule which should be adopted by all schools, and we as physicians should so teach, to admit no child after apparent recovery from contagious diseases, diphtheria included, until its propriety is vouched for by competent medical authority.

Second—Cleanliness—and the formation of local Boards

Digitized by Google

of Health everywhere, in every incorporated city, to instruct the people in the meaning and wide significance of this term; to point out the methods of securing it, and, when necessary, to enforce it. If these two simple principles—isolation and cleanliness—were universally taught and enforced, can it be doubted that diphtheria, which for nearly two years has spread over our State, bringing desolation and dismay into many communities, would be, to a very great and gratifying extent, within our control?

Third—Drainage—underground drainage where necessary—to carry the water from low places in the vicinity of dwellings, and which in such places remains during the entire year, only a short distance below the surface. The danger from such localities, in a sanitary aspect, is even greater than surface moisture or *over-ground water*.

Yet, unfortunately, the topographical features of many of our towns are such that it is not easily guarded against.

But aside from these considerations, there are others which especially concern us as physicians, growing out of the legitimate relations which exist between the profession and the public. The subject of the sanitation of cities and towns, though particularly coming under the control and regulation of Boards of Health, has of late years, in view of the rapidly increasing attention paid to it, and the generally admitted influence it exerts over the public health, risen to one of far greater magnitude.

Boards of Health may suggest the measures which, in their judgment, are required; they may point out defects and the means of remedying them; they may even appeal to the law to sustain them; but however earnest their efforts, however wise and judicious their decisions, they are powerless to effect a change unless sustained by public sentiment. To create a sentiment in favor of sanitary works co-operation is needed—the aid of the medical profession everywhere.

It is strange what an amount of ignorance prevails upon this subject, even among the intelligent citizens of every community, notwithstanding all that has been said

Digitized by Google

and written in its behalf. This ignorance begets opposition, and this opposition is more and more determined in proportion to the cost of the reforms proposed—in proportion to the tax upon the pocket.

To the public, absorbed in the pursuit of business, the alarm of the health authorities brings no terror. Money expended in drainage, sewerage, and other measures having in view the promotion of the public health, is looked upon as money lost. There are no interest tables by which the value of the investment can be calculated.

The class to which reference is now made will spend money in opposition to what they conceive to militate against their personal notions of expediency, or their freedom of action, but will withhold the merest pittance at the command of authority, in furtherance of an object the benefits of which they fail to appreciate. "Millions for defense, but not one cent for tribute."

Hence, a public sentiment has to be created; not by books, for those whom it is most important to reach seldom read books upon such subjects; not by newspaper appeals, though these exert an influence over a large class of citizens. It is by the slow and steady growth of opinion inculcated and enforced by the advice and earnest remonstrance of the members of the medical profession, that prejudice can be overcome. The health officer in his official capacity can never reach this class. It must be done by the family physician, under the sanction of the confidence reposed in him, and in friendly social intercourse.

MORTALITY IN ORPHAN ASYLUMS.

At the last session of the society, a committee was appointed to inquire into the causes of mortality in the orphan asylums of the State; and although the subject does not, by that action, properly come before the Committee on Public Hygiene and State Medicine, it may legitimately be considered as one of great interest to the State at large. If it

Digitized by Google

be true that the mortality in these institutions has been in excess of that which ordinarily attends similar institutions elsewhere—especially if it can be shown that the deaths among their inmates have been greater than can be reasonably accounted for by the conditions to which they are necessarily subject, or than would be expected to occur in other equal collections of children similarly situated, and at a time when epidemic influences have been widespread throughout the State—surely, it becomes a subject for the serious consideration, not only of the special committee to whom it was referred, but of that which relates to hygiene in its broadest sense. Less than a year ago the writer, accompanied for the greater part of the time by one other member of the State Board of Health, visited nearly all of the orphan asylums and foundling hospitals of the State, with the intent to ascertain their sanitary condition at the time and for the year previous. Of the impressions made upon the minds of the gentlemen, Drs. H. Gibbons, Sr., and A. B. Stout, who were associated with him, the writer is not authorized to speak; but those which were formed by himself may be briefly related by a transcript of the notes sketched at the time, so far as they have any reference to this subject.

NOTES ON THE ORPHAN ASYLUMS OF THE STATE—1877.

ST. JOSEPH'S BRANCH, SACRAMENTO.—The building occupied for this asylum, or convent, is commodious and well arranged. Six rooms are occupied as sleeping apartments —one 24x32 feet, containing 11 beds; one 39x24, 20 occupants; one 10x26, 10 occupants; three 17x13, 3 beds. The health of the inmates of this establishment has been good, there having been *no deaths* and only trivial sickness. The drains connect with the city sewers. The water is supplied by the city, from the Sacramento River.

SACRAMENTO PROTESTANT ORPHAN ASYLUM.—The building used for this asylum is ample in size, and well adapted for the present purposes of the institution. It contains three principal bedrooms—No. 1, about 45x17x11 feet, contain-

Digitized by Google

ing 14 beds; No. 2, same dimensions and occupancy; No. 3, 30x18x11 feet, containing 17 beds. The ventilation is good. There were said to have been no deaths during the year, although measles has extensively prevailed—27 cases being reported. Three cases of this disease were observed at time of visit, and one case, not examined, said to be typhoid fever.

A very objectionable feature is the association of the well with the sick, even in the same bedroom. The sewage of the establishment is received into a cesspool—the connections being unventilated.

PROTESTANT ORPHAN ASYLUM OF SAN FRANCISCO.—Though not constructed upon a modern architectural design, this asylum is eligibly located, with large, well-cultivated grounds, and deserves to be commended for the order and system everywhere visible.

The sleeping apartments are well ventilated, and the number of beds in each room is not too great to allow a sufficient cubic air space to each occupant. The ceilings are too low, however, and the halls too narrow. The water closets, which are inside the building, are badly located with reference to the prevailing winds, and hence become at times sources of annoyance. Yet the health of the inmates—182—has been good, nor has any epidemic disease, except whooping cough and parotitis, prevailed. The deaths during the year have been but two.

PROTECTION AND RELIEF SOCIETY, SAN FRANCISCO.—The building occupied is of modern construction, admirably adapted for the comfort and health of the inmates. The present occupants number 180, about equally divided between the sexes. The arrangements of the building are excellent, and perfect system prevails in the management of the institution. In one or two of the sleeping apartments the "Cubic-air Ordinance" has not been fully observed, but the excellence of the ventilation compensates for the deficiency. No epidemic has visited the institution during the year. The deaths for 1876 were two in number. Inside water closets have been discarded.

Digitized by Google

SAN FRANCISCO ROMAN CATHOLIC ASYLUM.—This is one of the largest and most perfect institutions visited—supplied with every convenience, *except good drainage*, which will be available when the sewerage of the city has been adapted to the locality of the asylum. No epidemic disease has occurred, and but one death—the result of accident. The number of inmates reported is 271.

ST. JOSEPH'S BRANCH, SAN FRANCISCO.—Situated at the foot of the hill upon which the last mentioned asylum is located, and designed for younger children than the other receives, and for infants, the arrangements are less perfect than the other, and the sleeping rooms more crowded. The number of inmates is said to be about 200. This is the only one of the asylums in which the committee could learn that any epidemic disease had appeared. There are said to have been 60 cases of smallpox in the institution, with 10 deaths, in August, 1876. It is a little remarkable that in none of the asylums thus far visited there should have been any severe outbreak of diphtheria. In the infant foundling department the mortality is given at 30, though it is stated, in general terms, that "nearly all" of this class die.*

This asylum is located in South San Francisco, where the sewerage system has not yet been perfected. Hence the drains empty their contents upon the adjoining street, intersecting the surface by foul shallow gutters.

PACIFIC HEBREW ORPHAN ASYLUM, SAN FRANCISCO.—One of the most complete and commodious asylums, reflecting credit upon the liberality of its founders. In all its internal arrangements it is excellent. A present inconvenience is the want of a perfect system of sewerage, the drains all emptying into a cesspool, from which the liquid matter escapes into the street. From the cesspool foul gases arise, which, when the wind does not blow, are offensive. The city sewers do not extend to this portion of the city.

* In the report of the Assembly Committee, made at the recent session of the Legislature, it is stated that "out of 66 foundlings received during the past year—1877—*sixty died.*"

Digitized by Google

LYING-IN HOSPITAL AND FOUNDLING ASYLUM, SAN FRANCISCO.—This institution reports 36 births during the year, and the number of foundlings left at the door, 112, of whom two were dead when taken in. The number of inmates for the year is said to be 156, of whom 82 have died. The building, though recently improved, is located in the crowded and business portion of the city, and, though possibly the best that can be procured, seems unadapted to the purpose for which it is used. The primary object of the institution is to afford an asylum for misguided girls, and to rescue them from the hands of the abortionist—a laudable object which, in the opinion of the committee, deserves encouragement.

INFANT SHELTER, SAN FRANCISCO.—The design of this institution is to receive the young children of working women during the day, and to take care of them while their mothers are at work. The average number on hand is 23 or 24, there being in addition, seven boarders. One death by diphtheria is reported during the year—among the boarders—out of three bad cases. No mention is made, and no apparent information obtained, as to the mortality among these infants at their homes. The system for which this home is established, though possibly one of the necessities which befall the lot of poverty in a large city, can scarcely be considered a faultless sanitary measure, more especially for reasons connected with infant diet, the want of the mother's milk at regular hours, and the liability to the spread of contagious diseases.

SANTA CRUZ ORPHAN ASYLUM.—The building is well arranged, and a commendable degree of order, cleanliness, and neatness distinguishes the whole asylum. For the present there is no proper sewerage, the drains from the house emptying upon an adjoining lot. The refuse is carted off at stated intervals. Yet, out of 49 inmates reported, there have been no deaths.

ST. VINCENT'S, SANTA BARBARA.—A handsome, well arranged building, containing every convenience. There are at present (June, 1877), about 60 inmates. The dormitories

Digitized by Google

are large and well ventilated. The water used upon the premises is of excellent quality. There are no indoor water closets. Drainage from the kitchen empties into a cemented cesspool. Two deaths occurred during the year, of diphtheria, there having been seven cases.

PAJARO VALLEY ASYLUM (MALE), WATSONVILLE.—There are said to be 42 boys in this institution. In its general features it is inferior to some other asylums, especially as regards order, neatness, and the ventilation of the bedrooms. There were, however, no deaths in 1876, nor, indeed, for three years, although six cases of diphtheria have recently occurred.

GOOD TEMPLARS' ORPHANS' HOME, VALLEJO.—This is one of the best institutions of the kind, attractive in its architectural design and its surroundings. The number of inmates reported is ninety. There has been an unusual number of cases of sickness, 43 cases of diphtheria having been reported between the seventh of April and the early part of May, 1876, the deaths being ten in number. It is supposed by Dr. Anderson, the physician in attendance, to have originated by contagion. The principal defect in this, as in the other asylums visited, consists in the absence of any arrangement for the isolation of patients affected with contagious disease. One case of scarlatina occurred during the year. [It is proper to remark, that the defect above mentioned was subsequently corrected, and Dr. Stout, who afterwards visited the asylum, reported that, "at present every desirable convenience has been made for the perfect isolation of the sick."]

This, Mr. President, includes all the asylums visited. The results, as shown in the notes of which your committee have given an abstract, may serve to throw some light upon the condition of these useful institutions, and relieve any impression which may have been formed of their insanitary influences.

But while it is believed to be true that the mortality in our asylums and foundling hospitals has been no greater than the situation and character of the unfortunate inmates;

Digitized by Google

the crowded condition of some; the epidemic tendency so clearly manifested during the year under consideration, in our cities; the influence of hereditary disease in many; would have afforded reason to expect, it must be admitted, that there are some things connected with their management, evils inherent to the system adopted, and to such institutions generally, which call for reform.

We cannot contemplate the mortality in the two foundling hospitals, for example, without a shudder; and the question naturally arises as to its causes. Cannot this waste of human life be avoided—this failure of humane and philanthropic effort so liberally expended for the saving of this helpless class, be changed to success?

Looking at the causes of infant mortality in general—*i. e.*, without regard to special influences and surroundings—they may commonly be included under the following heads:

1st. Errors in nourishment. 2d. Errors in clothing and regimen. 3d. Errors in ventilation—bad air. Allusion is made to children under one year of age, and hence no mention is made of dentition or of the contagious diseases, which rank high in the mortality of older infants.

Though admitting of numerous subdivisions, the above may be regarded as the great causes of infant mortality; they affect a certain proportion of infants of all classes; they are not exclusively the heritage of the poor, nor do they belong to the children of any one nationality. They reap their harvest everywhere, and under all social conditions.

According to Quêtelet, "a tenth of the children born die in the first month after birth, and one-quarter before the year is completed." (Routh, Infant Feeding, page 2.) In England, in 1872, out of 825,907 births, 123,596 died within the first year—1 in 6—and according to the English Life Table, of 1,000,000 that are born 46,503 die in the first month, and 85,976 during the first four months—1 in 11.6—the ratio diminishing from the first week and month, until the end of the year, in the twelfth month, the proportion is 1 in 131.

Digitized by Google

In France it is but little better, where it is said that 1 in 14 die in the first month of life.

Even in Boston, during ten years—1862 to 1871—of 63,449 children born, of both American and foreign parentage, 11,157 died within the first year—about 1 in 5½.

It is true that in later years these alarming proportions have been slightly reduced. Sanitary influences have reached even this tender age, and, among the intelligent classes at least, the necessity of pure air, water, and food is becoming more and more generally recognized. Yet even as late as 1875, of 1,000 infants under one year, 270.6 died in the City of Boston, and in the same city, for the same year, the percentage of deaths under one year to births was 18.2—a decrease of only 1.3 per cent for five years.

In the asylums, the three general causes of mortality above alluded to are accountable, together with others which are special to them. Among the latter we find the condition of the children at birth and prior to admission, the hereditary causes of disease and those soon acquired, the exposure, the neglect, the insufficiency of food, in some cases overcrowding, the vitiated air of hospitals, and the impossibility of bestowing upon them the care and attention which the delicate organization of many of such infants requires. It is unnecessary to enter into an argument to demonstrate the existence of these several causes of disease, or to explain their deleterious influences. No one can pass through the wards of one of these institutions without being the eye witness of one or more of them. These, then, we may assume to be some of the special and extraordinary dangers to which the inmates of our foundling hospitals are subject.

Of the general causes of mortality above referred to—those common to all infants from birth to one year of age—the first in order is of by far the greatest importance, and is almost universal. It embraces questions which have not yet been fully settled, and the control of which is attended with some difficulty. It presses often with terrible force upon the poor, and it is one of those difficulties which even

Digitized by Google

wealth, with all its resources and its power over circumstances, cannot always reduce to subjection.

The kind of diet suitable for young infants will at once, if we except the mother's milk, excite discussion. As to the latter all are agreed; yet even here the serious question arises how far the milk obtained from a hired nurse is capable of supplementing that from the mother's breast.

Apart from the difference in care which the two classes of infants receive—in one case prompted by affection, in the other compelled by duty or necessity—it has been thought that there is something in the different relations sustained—some sympathy—some magnetism—which may be recognized by its effects, though it cannot be explained. Statistics bearing upon this subject are not sufficient to establish its reality, even though facts like this are on record: "Of 100 children suckled by their mothers [in Paris], 18 died in the first year; of the same number at nurse, 29 died." (Quêtelet's Researches, par Routh.) Or this other one, related by the same authority, that of 6 twins, or 12 children, 6 fed by the mother flourished well; of 6 fed by hired nurses 3 died, and 2 more were, at one year of age, puny and sickly looking.

But however this may be, the difference must be slight compared with that well recognized between children fed upon breast milk and others brought up "by hand." In the hospitals of Paris, Rheims, and X, where artificial food is either extensively or very generally employed, the mortality is 50.3, 63.9, and 80 per cent respectively, an average of 64.8; while in Parthenay and Lyons, where children were suckled at the breast, the mortality was 35 and 33.7 respectively—an average of only 34.3.

In London, as lately as 1871, out of 9,041 deaths among children under one year, 29 per cent are stated in the Registrar's report to have died from "want of breast milk." It would seem that further demonstrations of at least one of the evils included under the first class—the deprivation of the young infant of good, pure breast milk—is unnecessary.

Digitized by Google

The records of the foundling hospitals of Europe are full of the most appalling statements relating to this subject—statements at the recital of which the heart of humanity sickens.

The question of artificial feeding—the substitution of other food for that which nature designed for the young infant—is one which opens up a wide field for thought and comment, and cannot be fully considered here.

It is unfortunate that there should still be so great a difference of opinion upon this subject—a difference apparently the result of personal observation and individual experience.

It should not be lost sight of, however, that in the decisions which individual experience enables us to form as to the value of a particular kind of infant food, we are apt to overlook the other factors in the case—the purity of the material, the care bestowed upon its preparation, the regularity and method of its administration, its temperature, and the surrounding hygienic conditions—which may favor an opinion not sustained by others, whose observations are conducted under other circumstances.

Yet the questions involved in this subject are such as all of us are compelled to answer in our daily visitations among the sick, and which are even more important and difficult when applied to the delicate and oftentimes constitutionally depraved subjects of charitable or State supervision.

Without entering minutely into this subject, which would be foreign to the purposes of this report, it may not be considered out of place to call to mind the important physiological and chemical facts:

First—That food, in order to be adapted to the support of human life, should contain both the nutritive and respiratory elements in certain proportions, and that in so far as it deviates from the standard which nature has provided in the mother's milk, just so far it is at fault. It is unnecessary to do more than add that milk—practically speaking, cow's milk, for this is the only one universally procurable—is the only kind of food which answers this test.

Digitized by Google

Second—That for children, at the age at which infants are commonly received into our foundling hospitals, the starchy or farinaceous substances in common use, are quite inappropriate; yet it so happens that, in reply to inquiries made by the writer at these institutions as to the food usually supplied, these very substances were those which, in their various forms and combinations, were generally adopted.

Digestion is an intricate, not a simple process; it requires the co-operation of different organs and secretions. In the adult, and in children after a certain age, these organs and secretions are perfect; they act harmoniously, and devote themselves successively, or in combination, to the particular principle of alimentation they are designed to subdue to the support of life. Now, we know that the salivary glands in the very young infant are in a rudimentary state, and there is reason to believe that the special office, or one of the important offices, of their secretion, is the digestion of starch.

If these facts be true, it follows as a rational conclusion, that starchy or farinaceous food—the arrowroot, the sago, the powdered cracker, the corn starch, and other forms of food which have so frequently been advised under the name of "infant's food"—should, as a general rule, be avoided, or used with great discretion.

Not only so, but they fail to fulfill the first requisite alluded to, by the absence of the essential elements, in right proportion, such as a perfect food should possess.

These theoretical conclusions from known physiological facts are, doubtless, in accord with the practical experience of a large majority of the profession. Reasoning therefrom, the deduction seems inevitable, that among the causes to which the great mortality of our foundling hospitals is to be ascribed, we may reckon, in addition simply to the want of the nurse's milk, the too liberal use of amylaceous food.

Of other factors embraced in the "second class" suggested above, *exposure* is not the least in importance. It is not peculiar to the foundling institutions of California.

Digitized by Google

It has been a source of complaint wherever these asylums have been maintained.

The young infant, at the most sensitive period of its existence, often with insufficient protection by clothing, usually without the nourishment for which even its own earliest instincts appeal, is carried, possibly a considerable distance, in the night-time, and exposed, under cover of darkness, at the door of the asylum. Its condition is the least favorable to existence; often cold and shivering, weak, sometimes diseased, and not uncommonly exhibiting the evidences of inherited constitutional vice.

Occasionally they are already dead when discovered—victims to neglect and starvation—or, if still alive, survive but a few hours after admission. That such instances do occur, the records of the hospitals abundantly show, and it is not to be wondered that the mortality among them should reach its present proportions.

A similar state of facts was reported in 1836 by Mr. Brownlow, in his memoranda of the London Foundling Hospital: "It has been truly said, that the frail tenure by which an infant holds its life, will not allow of a remitted attention, even for a few hours. Who, therefore, will be surprised, after hearing under what circumstances most of these poor children were left at the hospital gates, that, instead of being a protection to the living, the institution became, as it were, a charnel-house for the dead? It is a notorious fact, that many of the infants received at the gate did not live to be carried into the wards of the buildings; and, from the impossibility of procuring a sufficient number of proper nurses, the emaciated and diseased state in which many of these children were brought to the hospital, and the cruel conduct of some of those to whom they were committed, the deaths among them were so frequent that out of the 14,934 received, only 4,400 lived to be apprenticed out, being a mortality of more than 70 per cent. (P. 175, Routh; Infant Feeding, pp. 46 and 47.)"

A third factor in this class may be considered to be *confinement to the wards of a hospital*, and its attendant evils—

Digitized by Google

not the least of which is impure air. With every provision for ventilation, with ample cubic space for each inmate, the atmosphere of a hospital does almost always become to some extent offensive and impure; and this is especially true, for obvious reasons, of a ward or nursery where many young children are collected together. The evil, for the same reasons, is still more aggravated where no separate room is provided for the sick—a defect observed in some of the asylums of California.

There are many difficulties in all public hospitals for children, in the way of preventing the existence of the evils spoken of—of the immediate removal of soiled napkins, for example, by which the air of the nursery is often seriously contaminated. Add to these considerations, neglect of cleanliness, want of open air exercise, a frequent exclusion of the nursery from the pure, bright sunlight, and we have a brief summary of defects in the hospital system as applied to infants, which do not necessarily belong to home management, and to which is to be attributed the mortality so fearfully in excess of that which prevails in private life. It is a little singular, that notwithstanding the general prevalence of epidemic diseases, continued during two years, so few deaths should have occurred from these influences among the inmates of our asylums, and that cases of these diseases among them should have been so limited in number.

During the year 1866–7, from all the asylums visited—twelve in number—located in different parts of the State, containing an aggregate of 1,369 children, only ten deaths by smallpox, and thirteen from diphtheria, were reported. Of the latter, ten cases were in one institution. It is scarcely questionable that many of these could have been avoided by a proper and prompt system of isolation. There should be in all these institutions where so great a number of children are associated, a distinct apartment detached from the main building, where all contagious epidemics should be treated. The habit of permitting children sick with diseases of different kinds, some of them contagious, to remain in the same room or ward, and, more pernicious still, to

Digitized by Google

receive them into the nursery or play-room for those who are well, as the writer has on two or three occasions seen in these institutions, cannot be too strongly criticised.

Summing up the results of our investigations into the important subject of the mortality in the orphan asylums of the State, it may fairly be concluded that, while the mortality in the two foundling hospitals examined was so large as to justify inquiry into its causes, that of all these institutions collectively, was exceedingly small—only about eight per cent; that the deaths among the unfortunate inmates of the foundling hospitals were probably attributable to causes recognized as being almost inseparable from such institutions where the system of wet-nursing cannot be pursued; and that, in addition to this common cause of infant mortality, we are to consider the peculiar conditions by which the inmates are surrounded—the circumstance of birth and inheritance, of neglect, desertion, and exposure, and the slender vital force which most of them possess. All these things considered, it perhaps is not surprising that of 156 infants born in or received into one of these foundling asylums during the year 1876, 82 should have died, or, that of the entire number admitted into another similar institution, it should have been frankly admitted that "nearly all died." "Even in Massachusetts," said Dr. Jarvis, "even in the Massachusetts Infant Asylum, managed with the best charity and wisdom of the State, provided with the tenderest and most discreet attendance, with airy, properly warmed and ventilated rooms, with clothing most suitable, and food most digestible and nutritious that can be obtained, including wet-nursing as part of the nutriment—with all these means of sustaining life, 48 per cent have died in its four years' operation." (State Board of Health, 1873.)

When such a record is made for Massachusetts, where every possible provision is secured for the comfort, safety, and well-being of these tender subjects of charity, how can better things be expected of California, where wet-nursing is impossible, where the supply of ordinary nurses is often inadequate to the duties devolving upon them, where the

Digitized by Google

buildings provided are unsuited to the purpose, poorly ventilated, situated, as one of our infant asylums is, in the center of a large and populous city, shut off from the sun except upon the front and rear—where, in fact, economy of management is of necessity the ruling principle? Is it to be wondered at that, under such discouraging circumstances, the mortality in the particular institution alluded to should have reached the startling proportions of 55 per cent of all infants under charge? It may be some consolation to know that this death-rate is no greater than that of New York City Foundling Hospital, in 1869 and 1870.

It is easier, Mr. President, to point out defects and explain their causes, than to suggest a remedy. Perhaps the Chairman of the committee to whom this subject was especially referred, will be able to solve the problem.

DISEASE FROM EATING PORK—(TRICHINOSIS.)

Through the kindness of Dr. N. Williams, of Richland, Sacramento County, your committee are enabled to present the particulars of a few cases of disease arising apparently from eating diseased *pork*. Inasmuch as deaths from this cause have, so far as has come to the knowledge of the committee, been uncommon in California, the history of the cases referred to possess unusual interest. I cannot do better than to produce the record of the cases as transmitted to me by Dr. Williams, in his own clear and intelligent manner:

RICHLAND, SACRAMENTO COUNTY, CAL., March 25, 1878.

F. W. HATCH, M. D., *Sacramento City:*

DEAR DOCTOR: At your request, I send you to-day a brief report, from memory (not having taken notes at the time), of the fatal endemic occurring in my practice in October last. I will premise by describing the locality and surroundings. In the southern part of this county, some four miles northwest from Benson's Ferry, which crosses the Mokelumne River, and about the same distance east of Snodgrass Slough, there is a small section of country, per-

Digitized by Google

haps 400 acres, known as the "Ehrhardt Mound." The most elevated portion of this tract is perhaps twelve to fifteen feet above the surrounding tule bottom, to which in all directions there is gradual descent. The soil is a light alluvium, largely mixed with fine sand, porous, drainage good, no pools of water remaining on the surface, and has been under cultivation twenty years or more. On this eminence, within 200 yards of each other, reside the families of three brothers, German.

On the 8th of October I was called to see a sick child in one of these families. On my arrival I found in the three families four little sufferers, varying in age from three to eight years—two boys and two girls. They had been ill some ten days when I was called, with what their mothers said was "summer complaint and vomiting," and they had tried every domestic remedy in their reach, said by their neighbors, who are always plenty and officious at such times, to be good in such cases, but all without avail—"they grew worse every day." I found the three youngest laboring under the following symptoms: tongue coated, having a pasty appearance and moist; appetite much impaired; occasional vomiting; bowels quite loose, discharges frequently copious and having the appearance of a mixture of ashes and water, no blood; urine rather scanty, high-colored, resembling at times strong coffee, and a grayish mucoid sediment was often observed; œdema of the face, eyelids, hands, feet, and legs, was an early and prominent symptom, which disappeared gradually, lasting from one to three weeks. One of them had troublesome tympanites; pulse little above the natural standard, feeble but regular; fever of a low grade most of the time; skin moist, at times perspiration rather free; some thirst, though not urgent, cold drinks preferred. Another prominent symptom, and very detrimental to the patient, was extreme wakefulness, which could not be overcome to any considerable extent by anodynes. This symptom, like œdema, obtained in every case; intellect unclouded. The eldest of the four children, a girl of eight years, had had œdema, but it had passed away when

Digitized by Google

I first saw her. She was lying on her back in bed; shoulders elevated; head inclined forward; knees drawn up; was unable to move; wanted to be let alone, it gave her such severe pain to stir; deglutition painful; no swelling of throat or tonsils in either case. This patient had obstinate constipation.

I treated these cases with tonics, mild astringents, anodynes and stimulants, without any improvement in either case, at any time. They failed gradually, becoming considerably emaciated, and died in a comatose state—all four of them—within one week; the last on the 26th of October, about four weeks from the time the first one was taken sick.

During my attendance on these children, two other children of these families (girls—cousins, fourteen years old), were taken ill. Œdema, the same as the others, and little feverish. I gave them full doses of compound cathartic pills; they were much relieved after thorough catharsis; one of them recovered completely in a few days; the other had a mild relapse, which lasted some four weeks, but finally got well.

The father of this girl was also seized about this time with the characteristic œdema, which was confined to his body and legs, but he neglected treatment on the start, and kept around, trying to "work it off," but finally had to yield. His convalescence, like that of his daughters, was tedious, but recovery seemed to be complete eventually. Tonics were the chief remedies in their cases.

Here I had encountered an array of symptoms which I had not before met with during a practice of thirty-five years, and I had become thoroughly convinced (when they were dying off at the rate of four per week) of the identity of the malady they were all afflicted with, and also that some subtle agent or poison was at work of which I was ignorant. I had noticed that the water for family use was obtained from bored wells, and was good, though a little hard; also, that their privies were some rods from their

Digitized by Google

dwellings. Thus far their sanitary fixtures were good. I then investigated the culinary department of these unfortunate families, and soon ascertained from a neighbor of theirs, an intelligent German lady, that a few days before these children were taken sick, a hog was butchered by one of these families, and all three ate of it, using most of it while fresh, considerable of it in the form of head-cheese and sausage, of which the children were very fond. This lady and a cousin of hers—a lady—and a hired man, ate of this pork one meal, while fresh, and were sick the same afternoon, vomiting and purging. They soon recovered. This hog was sick the winter before, and though eating heartily all the time, was barely able to walk. It finally recruited up during the summer, and was killed in the fall.

A day or two after being made sick by eating of this pork, this lady told these folks how it served her and her cousin. They laughed, and said to her: "You ate some of that old sick sow." After this information I tried to obtain some of this pork for microscopic inspection, but it was all used up.

Now, what was the matter with these people? Was it trichinosis, from eating trichinous pork? I am inclined to think so; I would like to have the opinion of others.

Yours truly,

N. WILLIAMS.

The particulars of the above cases are given almost precisely as related to the writer by Dr. Williams, at the time of their occurrence. They were then considered to refer to the presence of trichinosis, and an ineffectual effort was made to procure a portion of the suspected pork for examination.

The prominence of nausea and vomiting, of pain and diarrhœa of a peculiar character, of muscular soreness, of anasarca, of free perspirations, the fact of the symptoms having occurred only in those who had partaken of the pork, not confined to one family, but to three, and the

Digitized by Google

absence of any other recognizable cause, seemed to concur in rendering the diagnosis almost complete.

If these suspicions are correct, the fact is an important one, and deserves to be recorded. It suggests also the necessity of the exercise of caution in the use of suspicious pork, or of pork incompletely cooked.

Digitized by Google

REPORT OF COMMITTEE ON OPHTHALMOLOGY.

BY GEO. H. POWERS, M. D., CHAIRMAN.

As the present Committee on Ophthalmology is the first ever appointed in this society, it may be proper to bring to your notice some of the more recent improvements made in this branch of surgery, without regard to the precise term covered by our appointment as a committee.

Our labors would, however, have been brought to a speedy close, if we could give to the statements of the senior Professor of Surgery on this coast such respect as we would gladly give to one in his station, and to one of his age and experience in practice. We find the startling preface to his published lectures on Ophthalmic Surgery that (I quote literally) "the reason I did not omit the diseases of this organ is, that the treatment of them is not half so efficient and effectual as it was twenty years ago." *Ipse dixit!* In truth, it requires but a brief examination of those printed pages to discover what were the existing theories of pretty good guessers upon diseases of the eye, in the middle ages, and up to the time of the discovery of the ophthalmoscope! It should be a matter of regret in this society that one of its own members should be the original inventor of the knowledge that the present age is so far behind its predecessor!

The original ophthalmoscope of Helmholtz, with its many early modifications, was best adapted for examination by the "indirect method," so called; that is, the observer's eye with the mirror were at a distance of twelve to eighteen inches from the observed eye, and the image of the fundus was enlarged and inverted by a lens of two or two and a

Digitized by Google

half inches focus held near the observed eye. As each observer became more expert in the use of this instrument, he found great advantage in many cases in discarding the object lens and bringing his own eye and the ophthalmoscopic mirror very near the observed eye, so as to see the fundus of the eye itself, instead of its image. In this case, there being no inversion of the object under observation, the examination is said to be by the erect or virtual image, or by the direct method. Dr. E. G. Loring, of New York, has perfected and given to the profession the best ophthalmoscope yet devised for this purpose, and it is rapidly superseding all others, as it is equally convenient for use in the direct and indirect methods, and by its great variety of auxiliary eye-glasses, enables an expert observer to determine the refraction of the observed eye, as well as its condition in respect of health or disease. The latest instruments of this form have the focal power of their auxiliary lenses marked according to the metric system, as do also the test glasses now made and used by oculists. The "unit" in these glasses is called a "dioptric," and is very nearly equal to the 1-36 of the former French scale. The No. 2 is two "dioptrics," or nearly 1-18 of the old scale, and so on.

To render easy the transition from one scale to the other, Snellen has devised a very ingenious instrument, called the phakometer, by which the focal power of any lens can be instantly determined in units of either scale.

Carter's fixed ophthalmoscope, for purposes of demonstration in classes, and Forster's perimeter, for determining and recording the limits of the field of vision, are two very valuable contributions to the armor of the ophthalmologist, which may be briefly mentioned here as not being very generally well known, though not of so recent invention as the appointment of this committee.

Dr. Formad, of Philadelphia, has given (in the American Journal of Medical Sciences for January, 1878), a most interesting account of his investigation of the nerves of the iris, a subject hitherto obscured, according to him, by insufficient knowledge of the best methods of preparing the

Digitized by Google

microscopic specimens. By the special means described and employed by him in above fifty specimens of iris of rabbits, he was able to make out five distinct circles of nervous plexuses, not lying all in one plane, but in different layers of the structure of the iris, most of the larger trunks lying in front of the blood vessels. He found that the nerves enter the iris from the ciliary muscle, through its outer peripheral border, in comparatively small trunks, and form an irregular dense circular plexus round the whole circumference of the iris, from which proceed the other four concentric circles by anastomosing trunks. Dr. Formad found no ganglia, but frequently saw conglomerations of protoplasm on and between nerve-trunks, which he thinks may answer to the ganglia and "ganglion-like masses" spoken of by other observers.

A radical change has taken place in the views of ophthalmologists upon the etiology of glaucoma. This disease was formerly considered a neurosis, the increase of intraocular tension being supposed to be caused by an increase of production of the fluid contents of the globe, in consequence of irritation of the ciliary nervous system.

It is now claimed by many of the best pathologists, that the increased tension is caused by an increasing density of the sclerotic, which prevents exosmosis through that tunic. In place of the iridectomy introduced by Von Graefe for the cure of this disease, or the relief of its symptoms, it is now claimed that equal benefit can be obtained by any operation which will furnish a means of filtration or drainage. By some, a simple incision through the sclera is considered sufficient, as the cicatrix resulting allows exosmosis more readily than the hardened sclera. Wecker advocates and employs a seton of fine gold wire introduced through the external tunics of the globe, thus keeping up a steady drainage; and it is claimed that as a rule no irritation is caused by the presence of the foreign substance.

This gold wire seton has also been used, with at least temporary success, in cases of separation of retina by effu-

Digitized by Google

sion; but the operation is as yet too new for a decided report on the permanence of results.

Noyes' operation of "outscooping" the entire contents of the globe, as a substitute for enucleation, for prevention of sympathetic ophthalmia, has found several advocates, and in the cases for which it is suitable may be much more satisfactory to the patient than the removal of the entire globe, which seems so formidable an operation to most persons.

Investigations of myopia in school children, begun in 1867, by Cohn, in Europe, have been carried on, and are still zealously made by some of the best oculists of our own country, and a pretty uniform increase of the degree of near-sightedness from year to year clearly proved. Furthermore, Dr. Loring, in a very ably-written paper, has argued that the human eye, in consequence of increasing devotion to study and reading, is actually changing form, becoming more myopic with each generation.

Boll has recently proved, by careful experiments, that the retina receives impressions somewhat after the manner of a photographic plate, being furnished with a delicate coating of purple-red pigment, which is constantly undergoing destruction by light, and as constantly reproduced in darkness, during life and health, but which finally vanishes in very few seconds if exposed to sunlight after cessation of life. As the sodium light, however, does not destroy this "see-purpur," Boll succeeded in taking an impression of a window sash on the retina of a living rabbit, which was distinctly visible after the rabbit had been beheaded, and the eye removed and dissected under this light. This experiment has also been successfully repeated by Drs. Wadsworth and Bowditch, of Boston, and by others.

The subject of color blindness has lately been brought into prominence in connection with the causation of railroad and steamboat accidents, and it is found that the inability to distinguish a red light from a white or green one is much more common than had been supposed. As

Digitized by Google

the incurability of color blindness has been abundantly proved, it becomes at once a most important necessity that all employés of railroads or steamer companies, who have to use colored signals, should undergo rigid examination in this respect.

The use of calabar bean has of late been greatly extended among ophthalmic surgeons, especially in peripheral ulcers of the cornea, and in the after treatment of operations for extraction of cataract, and of iridectomies; also, in any inflammations in the ciliary portion of the globe, as it is found to lessen the ciliary circulation, and by its myotic effect to tend to prevent adhesion of the edges of the iris in a corneal wound. It is used in aqueous solutions of the extract, or of the alkaloids eserine and physostigimne sulphate. Antiseptic qualities have also been claimed for it, but have not been confirmed by tests made for that purpose.

Pure carbolic acid, applied with a fine pointed pencil, has been used with success in some forms of granular conjunctivitis, of episcleritis, of enlarged conjunctival vessels, and in ulcerative inflammation of the margin of the lids. Its use is attended with very little pain, and the escharotic effect is very decided. I may notice very briefly an operation not described in any books that I have seen, which has proved very useful in my hands, as in those of Dr. A. M. Wilder, who suggested it to me, for the relief of the unsightly deformity and the great sensitiveness of corneal staphyloma. In many of these cases there is great, though not apparent, hypertrophy of the corneal substance, and in these we have obtained great reduction of the deformity, and completely relieved the sensitiveness, by transfixing the cornea from above downwards, with two or three curved needles, armed with ligatures, not entering the anterior chamber at all, then slicing off the protruding portion, bringing the needles through, and tying the ligatures tightly. In some cases it becomes even possible to restore some vision, by an iridectomy performed later.

Digitized by Google

In preparing this report, the Chairman of your committee has understood it to be his province not to give you in detail all that might properly be expected in a similar paper by an ophthalmological society, but only to present a brief epitome of some of the advances recently made in this specialty, to show you in what directions ophthalmic science is progressing.

Digitized by Google

FIBROID TUMOR OF THE UTERUS.

BY JOHN SCOTT, M. D.,
SURGEON-IN-CHIEF CALIFORNIA WOMAN'S HOSPITAL.

GENTLEMEN: The subject of fibroid degeneration of the uterus is unfortunately too familiar to us all, and must, for the gynecologist, ever have a painful interest, for we are not infrequently obliged to witness sufferings which we can but partially alleviate, and a steady progress towards a fatal termination we feel ourselves powerless to avert. I refer more particularly to those enormous growths which involve the entire removal of that organ and its appendages as the only cure—an operation not yet recognized as one of the legitimate enterprises of surgery. Fortunately, these cases are not common, and we have more frequently to deal with the ordinary uterine fibroid; but even here, the utmost skill and ingenuity at our command are often taxed to the utmost to save our patient from pain and exhausting hemorrhage, which, unrelieved, are a constant peril to existence. Till within the last few years the etiology, pathology, and treatment of uterine tumors have been but imperfectly understood, but, thanks to the teachings of such eminent men as Sims, Emmet, Thomas, Barnes, Tait, McClintock, and Matthews Duncan, we are now much better able to contend against the difficulties of their management, and, though the mortality is still larger than we like to contemplate, we are daily gratified by results which were formerly looked on as unattainable. Still, notwithstanding all that has been so ably written on the subject, I think you will agree with me in stating that we have yet much to learn; that each individual case is a study in itself; and that when

Digitized by Google

surgical interference is called for, we ought to know clearly *when* it is necessary to operate, and what are the difficulties and the *dangers* attending it. I am not vain enough to imagine that I can add much to our present knowledge, but I think there are some points of a practical nature which might with advantage be more prominently noted, and a due attention to which would materially aid us in their management; and these I purpose adverting to towards the end of this paper.

When absent in the East last year, a patient was admitted into the California Woman's Hospital, the details of whose case I now lay before you.

Mrs. C——, aged 37; admitted April 20th, 1877. History—Married 10 years; 6 children; 2 abortions; last 4 labors severe, but natural; menstruated at 16; last period, March 20th, 1877; duration of illness, 6 years; previous health good; has lost a great deal of blood at each confinement; had severe hemorrhage at birth of last child, and was so reduced that for three months she could not be raised without fainting, and was six months before she recovered her strength; during the last six years has had menorrhagia, frequently amounting to flooding, and lasting from twelve to fourteen days, accompanied by pain. Three years ago she noticed an enlargement of the abdomen, which still exists, and is very painful at her periods; patient thin; complexion sallow, and presents the appearance of constant suffering; mostly confined to bed; heart sounds normal; pulse, 90 and irregular; temperature, 98; appetite fair; no thirst; extremely nervous.

Examination.—Uterus low down, and lying a little to the right; is enlarged, and a round, smooth, hard tumor is felt above the pubis; cervix hypertrophied and indurated; os contracted; sound passed 5½ inches posteriorly and a little to the right.

Diagnosis.—Fibroid tumor of the uterus.

Treatment.—Hot vaginal injections and rest in bed; quinine night and morning; citrate of potash during the day.

April 21—Catamenia came on, and became so profuse

Digitized by Google

that on the 25th a tent was with difficulty introduced to arrest hemorrhage.

April 26—Had a chill during the night; pulse, 150; temperature, 103; under ether the tent was removed, but the cervical canal was so contracted that it was found impossible to reach the tumor; the uterus was injected with hot water, followed by iodine, and before the patient left the table the temperature fell to 101½, and pulse to 120.

April 27—Pulse, 96; temp., 98; slept well; no pain; palpitation of heart; ordered a purgative, to be followed by administration of thirty minims of fluid extract of ergot, three times a day; continued quinine night and morning.

May 1—Doing well.

May 7—Slight hemorrhage still continuing.

May 8—Continued ergot; no expulsive pains produced by it.

May 15—Cervix incised, but not deeply, on each side; continued ergot.

May 28—Catamenia; flow not so great, but free.

May 29—Sponge tent introduced; opium suppository.

May 30—Tent removed; instant rigid contraction of os internum; exploration of interior impracticable; injected uterus with hot water, followed by iodine.

June 1—Flow arrested; patient comfortable.

June 12—Doing well.

June 19—Bloody discharge.

June 20—Patient examined by Dr. J. Marion Sims, who advised non-interference for the present.

June 22—Dr. Scott took charge; on examination, found discharge continuing; os contracted; cervix indurated; believing that further attempts at dilation would be hazardous, I determined to incise cervix.

June 26—With scissors divided the cervix on each side up to vaginal junction; tamponed the os with glycerine cotton.

June 27—Condition good.

June 29—Rather free bleeding, which was found to come from incision; arrested by pledget of iron.

Digitized by Google

June 30—No hemorrhage; pulse, 110; temp., 100.

July 23—Catamenial flow has been almost natural, and only five days duration; inserted a large sponge tent with the greatest ease.

July 24—Removed tent, and was able to make a thorough examination with two fingers in uterus; found a tumor occupying the entire front wall as high as the fundus, and measuring about three and a half to four inches across; it was somewhat prominent in center, but imbedded in the uterine wall, and no attempt at enucleation had taken place. I at once passed up Sims' narrow knife, lying flat on my finger, and having turned the edge forward, made a perpendicular incision for a depth of about two lines; free bleeding followed this operation, but was easily arrested by hot water injection and iodine.

July 26—Condition good; ordered thirty minims ergot, three times a day.

July 29—Sharp, darting pains, and bearing down; some discharge.

August 17—Catamenia; flow scanty.

August 23—Small sponge tent introduced in forenoon and a large one in afternoon.

August 25—Removed tent and examined; enucleation had begun; tumor more prominent, and beginning to fill the cavity; former incision had evidently not opened the capsule, as it had closed; I now incised freely for about two inches in length; free bleeding followed, but was soon controlled by hot injections and iodine.

August 26—Pain and bearing down; p., 100; temp., 99; ordered opiate enema and poultices.

August 27—Expulsive pains very severe; p., 112; temp., 101½; continued ergot and opiates.

August 28—Constant bearing down pains, and on examination found tumor presenting within an inch of os; free serous discharge, and rather offensive.

August 29—Discharge profuse and offensive; as the canal was quite pervious, the nozzle of Davidson's syringe

Digitized by Google

was introduced, and hot water with carbolic acid—1 to 60—thrown in night and morning; p., 100; temp., 100.

August 31—Expulsive pains intolerable; stop ergot; discharge very free and offensive.

September 1—On examination tumor found distending os, but not external to it; p., 112; temp., 99 4-5; constant pain and sweating profusely; blood poisoning going on, but not seriously; p., 112; temp., 99 4-5; as the tumor had not entered the vagina I was desirous of waiting, but as my colleagues in consultation thought the risk from septicemia great, I consented to operate. The patient having been brought deeply under the influence of ether, with a strong vulsellum, I commenced steady traction, at the same time breaking up the adhesions with the finger and sound. I found the bands of connective tissue exceedingly strong, and difficult to break up, but with the aid of Thomas' scoop I succeeded in doing so, but not completely. I noticed, however, that traction long continued had but little effect, and, after the lapse of half an hour, was inclined to give it up, when the tumor suddenly gave way, and the greater portion of it was delivered, but apparently unaided by muscular contraction, as I found the uterus open and flabby, with the remaining portion of the tumor high up in front, and still attached. I then bethought me of injecting very hot water, which instantly brought on contraction, and having again seized the tumor, I removed it rapidly and easily. There was but little bleeding, and I contented myself with the injection of hot water, followed by Churchill's tincture of iodine, with which I swabbed the cavity. The tumor weighed a pound, and showed no pediculation whatever.

September 2—Tongue rather dry; pulse, 120; temp., 100. Ordered hot injections, carbolized, twice a day, into uterus.

September 3—Flatulence—but doing well.

September 4—Doing well. Ordered an ounce of castor oil, and 7½ grains of quinine, night and morning. Colored discharge, but odorless.

September 15—From this time improvement was rapid.

Digitized by Google

September 18—Complains of pain over the womb. Ordered blister, and continued quinine. Pulse, 123; temp. 98 4-10.

September 20—Doing well.

September 23—Attack of diarrhœa, which was easily checked.

September 28—Catamenia; flow normal; no distress.

October 17—Under ether, pared the edges of cervical incision, and united them by six silver sutures.

October 23—Removed stitches; perfect union.

November 10—Discharged cured.

For various reasons the above case is of great interest, and worthy of some remarks, as typical of a class which has been formerly regarded with dread by the profession. We had here a patient who had been suffering from pain and exhaustive hemorrhage for a period of six years, and had in consequence become anemic and debilitated, to such a degree that she was almost constantly confined to bed—the tumor not very large, but firmly imbedded in the uterine wall, with, on the part of nature, apparently no attempt at enucleation, and with an indurated cervix and a contracted os—a state of things so unpromising, that even so bold an operator as Dr. Marion Sims advised non-interference for the present. With this opinion I found it difficult to coincide, for it was but too evident that, so long as the tumor remained *in situ*, any attempt to permanently control or arrest the hemorrhage would be ineffectual; while on the other hand, years might elapse before nature, unaided, would effect its expulsion. Under these circumstances I decided, not simply on an incision of the cervix (for that had been done during my absence), but on a bilateral division as far as the vaginal junction, including, as it does, the circular fibers of the neck. I had three objects in view: first, the partial arrest of the hemorrhage; second, the excitation of uterine contraction; and third, that I might with ease and safety largely dilate the canal by sponge tents, so as to gain free access to the interior, for further manipulation—and these objects were fully accom-

Digitized by Google

plished. I did not, as you will note, insert the sponge tents after division, for I consider such practice dangerous; but I waited till after the following period (during which the flow was nearly normal), while I at the same time took care to prevent the edges from uniting, and when I did dilate, the cavity was opened up so effectually that I had no difficulty in tracing the dimensions of the tumor, and incising its capsule.

In my opinion, the question of dilatation of the uterus, in connection with the treatment of uterine fibroids, has not received the due attention which it merits, for I have more than once seen the most lamentable results from incautious attempts at dilatation by sponge tents, where the os and cervix were hard and resisting. I have seen, as the result, a low and insidious form of inflammation induced, followed by rigors and sweating, the sure precursors of the pyemia or septicemia, which have invariably destroyed the patient. The expert will of course avoid these dangers, but we have all to learn by experience; and I would lay it down, as a rule, that a free division of the cervix—an operation devoid of risk, and easily remedied afterwards—should, in the manner above detailed, precede dilatation. I would go still further, and would also lay it down as a rule in cases where, from conformation or otherwise, the removal of the tumor was deemed impracticable—for in such cases I have found free dilatation of the cervical canal, followed by injections of strong tincture of iodine, wonderfully effective in controlling hemorrhage, and, in one case certainly, followed by absorption of the growth itself.

The attention of the profession has been largely directed of late to the effect of ergot, administered hypodermically, and in large doses, on the growth of uterine fibroids. It has been claimed that it checks uterine hemorrhage, arrests their growth, and in some cases produces atrophy and absorption, as the result of uterine contraction. I must admit, that in my hands it has failed to produce these results, though I have given it what I think would be considered a fair and honest trial in several cases, and for

Digitized by Google

lengthened periods. In sub-peritoneal growth it is, of course, useless, but in sub-mucous ones I should expect from it the greatest assistance, in hastening expulsion. In interstitial growths, however, and before enucleation has proceeded to such an extent as, in the words of Dr. Emmet, to bring the tumor "within the action of gravity," it is certainly ineffective; and this has been exemplified in the present case. The patient was admitted into hospital on the 20th April, and shortly afterwards was put under the influence of ergot, in full doses, but up till the time preceding the division of the cervix and incision of the capsule, and before the process of enucleation commenced, it failed to produce uterine contraction. No sooner, however, had enucleation fairly begun, than the ergot, in precisely the same doses, brought on the most marked expulsive pains, which at length became so violent as to oblige us to suspend its use.

One word as to the operation itself. I have to confess that I believe I operated too soon, and that had I waited till the tumor had fairly entered the vagina, the extreme difficulty which I experienced in the removal, and the risk to which I exposed the patient by such rough handling, would certainly have been avoided. My colleagues dreaded the dangers of further blood poisoning—and there certainly was danger—but in former cases, I found that so long as the pulse and temperature was not much above the normal standard, I could wait with safety for protrusion—particularly when aided by hot vaginal injections and quinine. As was seen, enucleation had only imperfectly taken place, and the positive immobility of the tumor under the strongest traction, and the extreme difficulty of separating the adhesions, even with the aid of Thomas' scoop, could only be appreciated by being witnessed.

In Dr. Emmet's admirable monograph on uterine fibroids, he illustrates, in a manner not hitherto understood, the effect of steady traction, aided by uterine contraction, in

Digitized by Google

effecting the gradual pediculation and expulsion of the tumor. I looked for it in this case, but it did not take place. The tumor was lifted out of its bed, and no pediculation was visible, clearly owing to the fact that I had anticipated the efforts of nature by operating too soon—an error I am not likely to commit in future. I may here state that I regard Thomas' scoop, which I now exhibit, as a valuable aid to us in operation. It materially assists us in breaking up attachments, and the serrated edge being directed inwards, no damage can be done to the uterus. The instruments usually needed for the removal of fibroids are, two or more strong vulsella, Thomas' scoop, a strong steel sound, a pair of strong scissors, curved on the flat, and an ècraseur. The chain ècraseur I have long discarded as clumsy and difficult to apply, but the single wire ècraseur I now show you I have found of the utmost service, and entirely free from risk, while easy of application and not followed by the hemorrhage which sometimes takes place after division of the pedicle by knife or scissors. The wire is steel, *unannealed*, and can be made to take and retain any angle you may desire, and when slipped over the body of a tumor, guided by one or two fingers in the uterus, it can be with ease adjusted round its neck, and if the screw is worked very slowly, the division is perfect—with a pedicle high up, its aid is invaluable.

In one case of enormous fibroid, too large for delivery through the os, I have divided, first one third and then a second third of it in the uterus, and delivered them, before taking away the remainder; and after doing so, I examined and found another small fibroid right at the fundus, which I scooped out with the finger and extracted. To guard against hemorrhage after extraction, I have never found it necessary to do more than inject very hot water, and then swab the interior thoroughly with Churchill's tincture of iodine.

Digitized by Google

EXCISIONAL SURGERY OF THE ANKLE JOINT.

BY JAMES MURPHY, M. D.,
VISITING SURGEON TO ST. MARY'S HOSPITAL, SAN FRANCISCO.

I desire to bring before the State Medical Society some facts regarding excision of the ankle joint, as I believe that in the whole field of conservative surgery there is no operation which promises so good a result with so little danger to life as this one.

Excision of the ankle joint was first carried into practice by the elder Moreau, in 1792, and by Moreau the younger, in 1796. For more than half a century the operation was partially abandoned, being subjected to all manner of praise and dispraise, until the year 1851, when Hancock, in England, again brought the operation before the surgical world by its oft successful performance. In summing up our latest statistics, we have thirty-seven British cases, reported by Messrs. Hancock, Holmes, Erichson, Mulvaney, and Morney. Twenty-five recovered with good and useful limbs; seven died; and two submitted to amputation, while the result of three cases was unknown. This exhibits a mortality of about twenty per cent.

Dr. Spillman has collected seventy-three cases, fifty of which were complete excisions of the joint, while twenty-two were incomplete. Fifty recovered; fourteen died; six submitted to amputation; and three had not terminated. This likewise gave a mortality of about twenty per cent.

It is to be regretted that American surgeons have not recorded their cases more fully, as I have no doubt they would show as good, if not a better record, than their transatlantic brethren.

Digitized by Google

Of nineteen cases recorded by Dr. S. W. Gross, eleven recovered, and eight were fatal, showing a mortality of more than forty-two per cent. These cases were gunshot wounds, and like European cases of the same class, throw a dark shadow over the mortuary record, which invariably accompanies everything relating to war.

Dr. Gross, the elder, beautifully describes the operation, gives some statistics and rules regarding its performance, with his usual care and precision, but nothing more.

Dr. Sayre, of New York City, gives several examples of its successful performance.

Of American and European statistics it is extremely difficult to cull the civil from the military and hospital cases, the records of one getting mixed with those of another. But of all the records of civil cases which I can collect, the mortality is about six per cent, while of military and hospital cases the mortality is twenty per cent.

In nearly all cases when complete excision of the ankle joint is required, there is no other alternative than Syme's operation, or amputation of the leg.

In the American Journal of Medical Science for April, 1868, Dr. Drinton gives one hundred and sixty-eight cases of amputation of the leg, which are both American and foreign cases. One hundred and eleven recovered, and fifty-three died, giving a mortality of about thirty-two and one-half per cent.

Of the two hundred and eleven cases given by the Surgeon General of the United States army, one hundred and six died, or about fifty per cent.

From all sources in civil practice the lowest mortality is twenty-six per cent, whereas, in excision of the same class it is six per cent—a gain of twenty per cent. Syme's amputation, under *favorable* circumstances, gives a mortality of eight per cent.

It will thus be seen that under all circumstances, whether civil, military, or in general hospital practice, taking human *life* into consideration, the percentage is greatly in favor of excision; and with this gain we avoid the mutilation, by

Digitized by Google

an amputation, and restore to usefulness, and with scarcely any deformity, one of the most useful portions of the human body. The destruction of so little nervous and muscular tissue as compared with amputation, renders it extremely safe, while the use of Esmarch's apparatus causes it, if necessary, to be almost bloodless.

During the last few years I have excised eight ankle joints. Five were complete excisions, and three incomplete. Seven were the result of compound fracture of the tibia and fibula, in the region of the ankle joint, and one a strumous case. In no case did the constitutional disturbance reach that extent it does in amputation of the leg, or in Syme's amputation; and all the cases upon which I have operated recovered with good and useful limbs, and with scarcely any lameness.

Appended is a list of the cases and their place of residence, as far as I now know, and they can be seen by any member of the society who desires to call and examine them.

Thomas Stevens, aged forty; foreman stable, near Wells, Fargo & Co., at Virginia City. I was assisted in the operation by Dr. L. C. Lane, of this city, at the Russ House. Two inches of the tibia and fibula were removed, also the astragalus entire. He recovered rapidly, with little shortening, and without anchylosis.

John Kennedy, merchant, aged thirty-five years; residence, 628 Ellis street. Excised about one inch of the tibia and about one half of the astragalus. Operation performed at his residence. Made an excellent recovery without anchylosis, and no perceptible lameness.

Walter O. T. Smith, aged thirty-two years; foreman Steam Fire Engine Company No. 6; residence, 916 Pierce street. The operation was performed at his residence. I was assisted by Dr. C. G. Kenyon, and removed about two inches of the tibia and fibula, also the entire astragalus. Recovered rapidly, with anchylosis, but a good and strong leg.

William Kieley, a strumous subject, aged fourteen years.

Digitized by Google

I excised about one inch of the tibia and fibula, completely removed the astragalus, a portion of the *os calcis*, and entire scaphoid bone. Recovered slowly, but now walks with little lameness. The operation was performed in Saint Mary's Hospital. Present residence, corner Welch and Zoe streets.

Alpous A. Talbot, milkman, aged thirty years. Excised about three inches of the tibia, fibula, and entire astragalus; assisted by Dr. J. D. Whitney. The bone reproduced, so that there is but little shortening, and good motion in the joint. Present residence, No. 470 Tehama street.

Mathew Smith, aged forty-five years; native of Ireland; teamster. Operation performed at St. Mary's Hospital. Excised two inches of the tibia and fibula; removed the astragalus completely. Made a rapid recovery, with little shortening. Resides at Timbuctoo, Yuba County.

Henry B. Argall, aged 27 years; native of England. Both legs were broken by falling down a mining shaft. Operation performed at St. Mary's Hospital, July 30th, 1877. Removed articulating surface of tibia, and entire astragalus; also, a large amount of necrosed bone from the other leg. I was assisted by Dr. A. J. Bowie in this operation. The patient made a rapid recovery, and left the hospital well, October 20th, 1877. He could then walk a little without the aid of cane or crutches. Believe his present residence is at Virginia City.

John Mahony, aged sixteen years; injury, result of compound fracture. Excised about two inches of fibula, and a portion of astragalus. Nearly all the bone reproduced, and he made a rapid recovery. Was assisted in this operation by Dr. C. G. Kenyon. The patient at present resides at Sutter Creek, Amador County.

The mode of operation I practice differs little from that laid down by surgical writers generally. Whenever Esmarch's bandage can be applied with propriety, I use it. I make the incisions along the center of the tibia and fibula, then curving in a semi-lunar line parallel to the curve of the leg and foot. I avoid a division of the tendons of

Digitized by Google

the peroneii, and tibialis anticus muscles. In dissecting beneath the flexor and extensor tendons, great care must be taken to avoid the anterior and posterior tibial arteries. The periosteum should be carefully separated from the bone with a chisel or dull instrument of some kind, and care should be taken to preserve every portion of it intact. It is better to remove either bone of the leg, as the case may require, with a chain or narrow bladed saw, avoiding all violence, such as dislocating, twisting, and wrenching, as it invariably leads to increased inflammation of surrounding tissues, and consequently surgical fever. The astragalus can be sliced away with a chisel, or removed bodily, by dissection. Any bony structure having a tendency to caries should be carefully scraped away. The extreme angles of the wound, on either side, should be brought together by sutures, and the center lightly plugged with lint which has been saturated with a solution containing grs. vi of carbolic acid to 1 oz. of glycerine. The limb should then be placed upon a splint with extreme care, and a view to permanent position, it being important that the dressing should be accomplished without the slightest disturbance of the relative position of the foot and leg, as such motion is liable to excite inflammation, septicemia, pyemia, etc.

Each individual case may require a different kind of appliance for the retention of the foot in position. A light wooden splint extending from the toes along the plantar surface of the foot and back part of the leg, well padded, and retained in position by adhesive straps, is a good appliance for general use, a small trap under the heel being necessary to repad and keep it from being injured by pressure while the adhesive straps keep up extension, and counter extension, and allows the dressing of the wound as often as required without disturbance; also enabling the patient to lie on either side.

If care be used in the general management of the operation, and the proper adjustment of the leg and foot, it is astonishing how little constitutional disturbance is set up, and how rapidly the bone is reproduced; patients often

Digitized by Google

sitting up in bed one week after the operation, and going around on crutches in four weeks.

I always encourage the patient to sit up and get out of bed as soon as the condition of the parts will admit of it, as they improve more rapidly thereby.

Nearly all treatment is conducted upon the general rules of surgical practice, with this addition: I invariably retain a seton through the center of the articulation, until the patient can stand quite strong upon the foot. This seton is composed of braided oakum, saturated in the glycerine preparation before spoken of. It is drawn through daily, the soiled portion being cut off, and gradually reduced in size from time to time, until at the period of its discontinuance it is a mere thread.

It is desirable to avoid complete anchylosis, and obtain, if possible, a little motion which will in time become quite extensive, and with the aid of light steel appliances on either side, to support and protect the joint from injury, it becomes wonderfully strong and useful in a few months.

Digitized by Google

MEDULLARY SARCOMA OF KNEE JOINT.

AMPUTATION OF THIGH, AND DEATH SEVENTEEN DAYS AFTER FROM SECONDARY DISEASE OF THE LIVER.

REPORTED BY E. H. WOOLSEY, M. D., OF OAKLAND.

Wm. C———, aged 19½ years, occupation book-keeper, fell from a horse in the Spring of 1874, and strained his left knee. The injury seemed trivial, and was forgotten until the Autumn of that year, when a blow from a base ball bat was received on the same knee. For several months thereafter the patient suffered some pain and tenderness after violent exercise, and in the Summer of 1875 observed a slight swelling at inside of joint, and felt some inconvenience in walking. The tenderness, swelling, and inconvenience gradually increased, and in the Summer of 1876 he left Nevada, where he had been employed, and went to Salt Lake City, where he consulted a surgeon, who doubtless regarded the disease as malignant, as he expressed an unfavorable prognosis, and recommended amputation.

In the early part of 1877 he came to California, and settled in Oakland. At that time the knee was considerably swollen, tender, and painful, and a crutch became necessary. Soon after his arrival he consulted a physician of Oakland, who pronounced the affection an inflammation of the knee joint,* prescribed rest and alteratives, and put up the limb in a plaster of paris splint, which was worn about six weeks. Then a course of blistering was instituted, and the tumor was persistently irritated for about a fortnight,

* The history of this case was furnished by the patient and his mother.

Digitized by Google

when the patient, revolting, employed a "magnetic healer," whose treatment was more gentle, if not more scientific. The "last doctor" treated the case about three weeks, during which a small black excrescence appeared on the most prominent part of the tumor, and at the site of the last blister.

The tumor and the fungoid excrescence continued to enlarge, and on the 23d of September my opinion was sought. The patient lay in bed, to which he had been confined for several days, and was suffering greatly. The knee was swollen to about two and a half times its normal size, the bulk of the tumor at the inside. The distended skin was dark and shiny. At the upper part of the tumor, the ramifications of the superficial veins were marked, and at the lower there was a gangrenous, putrid, fungoid mass, protuberant about one and a half inches, about the size of a silver dollar, and which, when pricked with a pin, bled profusely. The tumor had an elastic feel, and, although the patient had no remission from pain, except when under the influence of anodynes, it could yet be handled pretty freely without augmenting his sufferings.

The inguinal glands of both sides—particularly those of the lower group of left side—were much swollen, and the patient was anemic. Without at that time knowing anything of the *history* of the case, I pronounced the disease to be malignant, and gave an unfavorable prognosis.

Subsequently, on applying the stethoscope over the upper part of the tumor, a slight *bruit* was detected, which, but for the clinical picture then before me, might for a time have misled.

The tumor was explored, by aspirating a few drops from the center, which to the eye had the appearance of blood, but, upon microscopic examination, were found to contain, beside blood corpuscles, a great number of small, amorphous, glistening masses, and a few granular nucleated cells, rather larger than blood globules, from which, alone, I should have been inclined to regard the disease as sarcomatous.

Digitized by Google

I advised amputation, as the only means by which relief could be obtained, and, although it was explained to the mother that secondary disease would sooner or later destroy her son, and to the patient himself that the benefit to be derived from amputation might not be of long duration, they were both, to my surprise, glad to avail themselves of anything which promised even *temporary* relief.

After some preparation, and on the 9th of October, assisted by Drs. Cary and Rheil, I amputated the thigh, well above the outline of the growth.

The stump healed with remarkable rapidity, and, except in the track of the ligatures, by first intention. The suppuration was very slight. The ligatures came away on the eighth (8th) day, and the wound granulated so quickly and well, that on the twelfth (12th) day union was perfect throughout, the stump was firm, and was moved frequently and freely by the patient, who sat up and turned over in bed without the slightest inconvenience.

The constitutional disturbance following the operation was extremely slight, and did not last more than 36 hours.

From the second day up to within two days of death, which occurred on the 26th of October (17 days after the operation), the patient was almost entirely free from pain, slept and ate well, improved in flesh, read and conversed freely, enjoyed a pint of porter and two or three cigars daily, and did not take any medicine.

The termination was remarkable. About forty-eight hours before death the patient was seized with vomiting, which recurred about every three hours during the day. The attacks were brief and peculiar, lasting only a few seconds, and consisting merely in eructations of bile, without any retching or apparent effort.

The attacks—always of the same character—gradually increased in frequency, and during the last hours of life, occurred about every five minutes. I tried a great number of remedies for vomiting, and prescribed quinine and brandy to combat the exhaustion; but everything taken into the stomach was rejected, and with it a copious discharge of

Digitized by Google

bile. Finally, after a rather prolonged attack, the patient sank back and died from syncope. The quantity of bile ejected during the last twenty-four hours, was not less than two (2) quarts.

[The knee joint with tumor laid open was exhibited.] The history of this case is, I think, suggestive of the disease having commenced at the bone. We find that the periosteum and a large portion of the head of tibia were destroyed; and moreover, an immediate communication between the diseased bone and the fungoid excrescence, which may be regarded as the sphere of greatest morbid activity during the progress of the disease.

Again, the appearance is somewhat suggestive of the disease having originated in the periosteum, because it is observed that the morbid process involved all the periosteum within reach, even that on the inner condyle of the femur, while a portion of the cancellous tissue and all of the medullary portion of the head of the tibia, remained unscathed. And just here there is probably some connection with the injury occasioned by the "ball bat," to which the disease has been referred, and from which the periosteum suffered some interference with its nutrition, as it will be remembered that pain, tenderness, and inconvenience date back to the accident referred to, and existed for a long time prior to the occurrence of swelling; and it will also be noticed that there does not appear to have been any expansion of the bone itself.

Later on, however, the disease appears to have involved most of the tissues about the joint, principally those at the inner side, and quite naturally, on account of their greater vascularity.

The several changes observed were evidently occasioned by an infiltration into the tissues of small round cells—which, on the one hand, differ materially from blood corpuscles, and the histological elements of the part, and on the other, resemble those commonly seen in alveolar sarcoma—for they are to be found everywhere among and in the

Digitized by Google

interspaces of the tissues of the knee, the involved tissues having been for the most part replaced by them.

Accompanying these cells—which are granular, some of them presenting bright nuclei—are numerous amorphous masses of a waxy luster (varying in size, as seen under a tenth objective, from a point to an eighth of an inch), a few fine fibrils, and occasionally a shred of connective tissue.

The large, cheesy-looking masses which occupy clefts in the connective tissues, and which, when regarded singly, remind one of cysts, though composed chiefly of the small round granular cells, contain an abundance of the broken lustrous material alluded to.

No new osseous formation or material was discovered, but an incision into the upper and denser part of the growth, yielded a gritty sensation.

Both the clinical history and microscopical appearance render it quite certain that we have here a specimen of *alveolar* or *medullary sarcoma*, a tumor, which has also been designated soft cancer, sarcoma-carcinomatodes, encephaloid, and fungus-hæmatodes, and preferably, perhaps, by the latter term, as it includes the clinical picture of the disease, which, once seen, can never be mistaken.

The points to which I especially desire to call your attention, are:

First—The probable development of the disease from an injury.

Second—The importance of prompt recognition of this extremely malignant and rapidly growing tumor, that systemic infection may be avoided by the early removal of the affected part.

Third—The very great impropriety of employing blisters and counter-irritants in such cases, as they but anticipate and hasten the natural progress of the disease.

Fourth—The very rapid repair of the tissues of the stump, and the comparative immunity of patient from inflammatory disturbance.

Fifth—The era of perfect relief from pain gained by amputation.

Digitized by Google

Sixth—The gradual and entire subsidence of swelling of the inguinal glands, within nine days after the operation, which fact I forgot to mention; and,

Seventh—The rapid and probable occurrence of secondary cancer of the liver, which, acting as an excitant on the biliary secretion, stimulated such a copious flow of bile into the duodenum that the patient became exhausted in his efforts to eject it.

And now, in conclusion, permit me to say, that while I have no disposition to deny the probable fact, that the life of my patient was abbreviated by surgical interference, believing as I do, that the short respite secured by such interference was infinitely better than an otherwise inevitable prolongation of suffering, I must yet admit, that at the time of the operation, I did not estimate the danger of premature infection, which I am now convinced should, under similar circumstances, always be feared.

The mode of production of secondary cancer, following amputation of the lower extremity, or the idea of direct infection, *i. e.*, infection by the shortest possible route, though hinted at by pathologists, does not appear to have occupied the attention of surgical writers.

In the case under consideration, the location in the lymphatic glands of the only secondary affection which preceded the amputation, together with the clinical data, render it probable that during the natural progress of the disease, the regular course of the lymph streams was not materially interfered with; and moreover, that the *materies morbi* generated at the knee, was generally eliminated, except that arrested and stored up in the lymphatic depots, while en route to the thoracic duct.

But afterward, on account of increased activity of the lymph stream, or augmentation in the quantity of lymph, and consequent increase of upward pressure, incident to a disturbance of pre-existing relations conditioned by the amputation, it is probable that the current of lymph from below, loaded, as it must have been, with infectious material from the swollen glands, upon arriving at the outlets of

Digitized by Google

the lymphatics from the liver, and finding less resistance in that direction, entered these vessels, reversing the currents therein, and thus flooded the liver with disease; for it is certain, that the accumulation in the inguinal glands was borne quickly away after the operation; and it is, judging from the symptoms of the case, also certain, that the secondary affection of the liver was neither preceded nor accompanied by any corresponding disturbance in other organs of the body.

Digitized by Google

OPERATION FOR CLEFT OF THE HARD-PALATE.

REPORTED BY E. H. WOOLSEY, M. D., OF OAKLAND.

Mrs. ———, forty-six years of age, had nasal catarrh (*specific*) in the Winter of 1875–6. The septum-nasi and the inferior and middle turbinated bones were destroyed. The floor of the nasal cavity was denuded of periosteum, and a portion thereof entirely destroyed, leaving an oro-nasal aperture a little more than one half inch in diameter. The patient was treated through the first quarter of 1876, and recovered perfectly, and, but for the cleft, satisfactorily.

The early history of this case, of which the above is a synopsis, will be found in the published transactions of this society for 1875–6.

A vulcanized rubber obturator was devised, which answered an excellent purpose, but as it rested against and was supported *in situ* by the teeth, and as the latter began to exhibit signs of decay, the patient naturally began to fear that the time was fast approaching when the teeth would disappear, and with them the only support for the obturator, without which she could neither speak, nor satisfactorily eat or drink, and appealed to me for surgical relief. At first I hesitated, and explained to her the great difficulties of the operation, and the general protest of surgical authorities against operating in such cases; but finally, after repeated appeals, and after the lapse of more than a year, during which there had been no outbreak of the disease, and after considering all the circumstances—the intolerable inconvenience and suffering foreshadowed by the decay of the teeth, the inestimable advantages which would accrue from a closure of the cleft, and the disposition of the patient

Digitized by Google

to submit to every surgical requirement—I consented to operate, and did so on the 23d of November last, ably assisted by Dr. Babcock. The operation (Langenbeck's) was troublesome and tedious, requiring the greatest delicacy of manipulation, and nearly two hours for its completion.

The first step—the paring of the margin of the cleft and the making of the lateral incisions—was easy enough; but the next—the separation of the muco-periosteal membrane from the bone—was exceedingly difficult. The instruments used, though the best I could procure, were ill-adapted for the work, having been designed for a somewhat different and far easier operation, viz: that for *congenital* cleft. The muco-periosteum, thin enough in young, healthy subjects, had here been attenuated by disease, and to thoroughly liberate, without wounding or mutilating it—a necessary preliminary to success—was no small task.* After working industriously, however, for about an hour, the membrane included within the lateral incisions was separated, and dropped down—suspended by its attachments anteriorly and posteriorly—so that the lateral edges of the central fissure came into easy and perfect apposition. The next and last step of the operation consisted in the introduction of three fine silken sutures, and was accomplished by Avery's method. The wound was then thoroughly cleansed above and below by means of a gentle *douche* of a weak solution of carbolate of iodine.† A piece of soft sponge was inserted into the nasal cavity to absorb the secretions which, on account of a depression in the nasal floor immediately surrounding the bony aperture, would otherwise

* Hemorrhage, which was very free, was readily controlled, from time to time, by pressing pieces of ice against the bleeding tissues.

† The formula for the solution used, is carbolic acid and tincture of iodine, each, one drachm; water, twelve ounces. The iodine is decolorized by the acid, which fact I discovered by accident, and the solution is clear, and in my opinion, the best surgical wash in use. In cases where there is sloughing, or much suppuration, I use a stronger solution.

Digitized by Google

have flowed down upon the wound, and thus have prevented the wished-for union. The patient was put to bed and kept quiet for several days, during which she was neither permitted to speak or to partake of solid food. The wound was kept scrupulously clean by means of the antiseptic solution, and frequent replacement of the sponge used in the nose.

At the outset, union seemed to be assured, and on the fourth day the wound was found to be air and water tight, but on the following day (sutures removed on fifth day) a minute ulcer was observed at site of central suture. On the sixth day, the wound leaked a little, and on the seventh there was a slight separation. The opening continued to enlarge for several days, and finally reached a diameter of a little more than one eighth of an inch, but has of late been contracting.

During the first week after the operation, an ulcer appeared at the anterior part of the left lateral wound, and for three or four days communication with the nose at that point seemed inevitable, but such accident was averted, granulation followed, and in less than four weeks from the date of the operation the patient was discharged quite sound, and very much improved. The membrane, which was shifted by the operation beneath the old aperture, has increased very considerably in thickness, and has become so exceeding firm and rigid as to suggest a reproduction of osseous tissue from the upper or periosteal layer. The repair has been so very satisfactory that I confidently hope, in a short time, to close the remaining breach of continuity.

By comparing the two casts* a marked improvement is observed. The existing aperture is by actual measurement only one thirteenth the size of the former, and so small that the patient, who, though still preferring to wear the obturator at meal times, on account of some inconvenience in drinking, can yet, without that instrument, do that which

* Two plaster casts were exhibited showing the condition of the hard-palate before and after the operation.

Digitized by Google

she could not prior to the operation, viz: speak and satisfactorily eat.

Thus it has been demonstrated that operations for the closure of large clefts of the hard-palate resulting from constitutional disease, are admissible, and may be undertaken with some prospect of success.

When, therefore, it is considered how frequently the integrity of the hard-palate is involved by disease, and especially in this country, by nasal catarrh, and that a person afflicted with a large oro-nasal aperture is prevented from wearing a suction plate of teeth, and in the absence of natural teeth, a useful obturator, without which he can neither speak nor conveniently eat or drink, the advantage to be derived from *uranoplasty* becomes obvious.

Digitized by Google

THE VALUE OF THE OPHTHALMOSCOPE TO THE GENERAL PRACTITIONER.

BY SARA E. BROWN, M. D.

The history of the ophthalmoscope has been so often related, and the instrument so accurately described, that it seems needless to say more; still, the frequent modifications, and rapid advance in scientific investigations in this direction, are continually developing new modes and results verifying previous conjectures, and clearing up much that was at first obscure, thus giving the thoughtful observer ample opportunity to add to the record.

It is more than twenty years since Cummings suggested the idea of the ophthalmoscope, but the honor of inventing the instrument belongs to Helmholtz, who published a description of it in 1851. Two years later Spencer Wells, in an essay published in the London Medical Times, September 10th, 1853, called the attention of scientific men in England to the value of the ophthalmoscope in diseases of the eye. Grafe and Sichel were the first to adopt this form of examination, and in 1860 a paper from Von Grafe excited a general interest in the subject, and from that to the present time many eminent men, both in Europe and this country, have devoted their time and talent to the study of disease with the ophthalmoscope. The first instrument introduced into this country was sent to Dr. Dix of Boston, by Sichel of Paris. It is a small and rather clumsy combination of three reflecting plates of glass, placed one upon the other, forming the longest side of a right-angled triangle. The other sides of this hollow prism are of metal, and lined with black velvet to absorb the light. The shortest side of

Digitized by Google

the prism is attached to the base of the instrument, in such a manner as to allow of its turning freely on its optical axis, and has also an opening corresponding to this axis. To the framework of this prismatic box, behind the opening, is connected a modification contrived by Rekoss, consisting of two revolving disks pierced with several holes, into which are fitted a series of concave lenses. By turning the disks, one after another of these lenses can be brought into the optical axis of the instrument, and by reflecting light upon the eye, and looking through them and the plates of glass, the patient's eye may be observed.

Helmholtz named his eye mirror, ophthalmoscope, and presented it to the surgeons for their favor. They adopted it eagerly, and much skill and ingenuity has been employed since then in improving and modifying this interesting little instrument.

The study of the reflection and concentration of light received a great impetus, and many principles and theories were brought to bear upon its mechanism, adding much to the science of optics.

The variety of instruments has now become confusing, embarrassing rather than helping the student. Zander gives detailed descriptions of more than thirty different ones, besides several binocular, and as many aut-ophthalmoscopes, and now probably a large number more could be added to the list.

The most perfect and elegant ophthalmoscope now in use is that of Dr. Edward G. Loring, of New York, the chief modification of which consists in a detachable cylinder in place of the fixed one of Rekoss. There are, besides the frame, three cylinders or disks, having places for eight glasses, thus forming a series of glasses extending in focal value from convex 1–48, and concave 6 to 48. One disk is entirely made up of convex lenses—sufficient for all ordinary degress of hypermetropia—one opening left vacant to represent emmetropia, and for examination by the direct image. Another contains the concaves of moderate focal power for myopia, and the third has the stronger numbers

Digitized by Google

of both concave and convex. These high numbers are used to determine the excavations or elevations of the optic nerve, the presence of tumors, membranes in the vitreous, detachment of the retina, etc. The stronger convex magnify the opacities of the cornea and lens to such a degree that they may be easily described. The mirror is slightly concave, and of 7″ focal distance, and is ground exceedingly thin, and all the surrounding brass is beveled away to the thinnest edge. The mirror can be detached, and the instrument used as an optometer, the patient revolving the disk until the suitable glass is found. An extra mirror can be obtained of London smoke glass, which gives so weak an illumination that the patient will not be aware of the light. Another can be had for use in determining astigmatism, while employing the instrument as an optometer. A separate biconvex lens of large size, and of 2½″ focal length, completes the instrument. The whole is perfectly accurate, of the best material, of exquisite finish and workmanship, strong, light, and durable, conveniently arranged in a neat case about the size of a common portemonnaie, that may be easily carried in the pocket.

In order to use this beautiful instrument for the study of the fundus of the eye, it is necessary to have the room darkened, and a clear steady flame from either a gas burner or common lamp, though a single candle flame can be made to serve if no other can be obtained. It is possible to use even the rays of the sun, admitted through a narrow slit in the shutter, but this is likely to dazzle, or may be obscured by a passing cloud. For using gas an Argand burner is best, either attached to a bracket with a universal joint, or to a standard with a flexible tube, so that it may be moved about on the table. If the common kerosene lamp is used it must be so trimmed that the flame will be round and full, not long and thin. It is well to protect the flame by a pale blue glass chimney, which also excludes the yellow rays of light. A small movable screen or thin shade, which can be firmly fastened to the lamp or burner, and having an opening on one side, is very desirable and convenient, but

Digitized by Google

not a necessity. The candle flame will give only a faint illumination, and is only desirable when the retina is over sensitive. The light should be at the side, and a little behind the patient, so that the cornea may be in shadow, and close to the shoulder of the person, on the right or left side, according as the right or left eye is to be examined. The observer and the observed must be seated directly opposite each other, within convenient distance, and at such a height that their eyes and the light may be on the same level. The patient should be directed to look at some point or object in the distance, behind and a little to one side of the observer. If the left eye is under observation, let the patient look over the left shoulder of the examiner—if the right eye, over the right. The gaze should be fixed as steadily as possible on the object, and the head held perfectly still, and when directed to move the eyes not to move the head also. The position of the eyes of the patient will be most readily assisted by directing him to look at the top of the observer's ear, and then to note some object at a distance in the same range. As the entrance of the optic nerve is a little to the inside of the median line of the eye, it is important to thus turn the eye inward in order to bring the nerve disc into the optical axis.

The eyes of children and young persons can usually be examined without artificial dilatation of the pupil, unless a very minute examination is desired, but the pupils of those in middle life, and the aged, are generally so small, and contract so quickly when the light is thrown upon them, that the pupil should be dilated by atropine, three grains to the ounce of distilled water; this will give dilatation in thirty to forty minutes, the effect lasting for eighteen to twenty-four hours.

Lateral illumination is accomplished by using a double convex lens, throwing the light over the anterior portion of the iris, and through the anterior chamber, thus being able to detect opacities, adhesions of the iris, foreign bodies, and cataract. A very easy, ready, and useful means of examination, and much used.

Digitized by Google

The ophthalmic study of the eyes of the dog, cat, and horse, is curious and interesting. Albrott, in his book, tells of a very intelligent veterinary surgeon in England who used the ophthalmoscope in studying the nervous diseases of animals, particularly the horse, with useful results.

After illuminating the fundus of a healthy normal eye, a red or white light will be reflected; white, if from the optic nerve disk; the red color is due to the return of light from the inner surface of the sclerotic, through the highly vascular choroid, the exact tint depending upon the relative amount of blood and pigment. In eyes where the pigment is deposited in large quantity, there will be a dark, dull, red tint, and is usual in persons of dark complexion and black hair; and on the contrary, in those of light complexion and hair, the amount of pigment will be small, and the sclerotic reflect more light, causing the fundus to appear of a much lighter tint. The first object to be sought for, is the optic disk, usually found circular in form, though often slightly oval, sometimes markedly so, in myopic eyes, and rarely in the form of an elipse. In size it varies in different individuals, and appears somewhat larger or smaller, according to the power of the lens used for examination. With an ordinary $2\frac{1}{2}''$ lens it would seem about the size of the end of a common lead pencil, or 7 millemetres; with a 4″ lens, as large as a three-cent piece, or 1 centimetre. The color of the nerve disk depends in some degree upon the age and habits of the person, and may be a bluish, yellowish, or gray tint; but the minute arterial twigs which nourish the nerve surface, commonly determine its color to be a delicate pink tint, which may seem of darker or lighter hue by contrast with the color of the surrounding fundus. When the disk is considerably magnified, the limits of the nerve proper may be seen as a fine grayish line, surrounded by a dense, white ring, two or three lines in width, and encircling this, still another ring intermediate in width. The first is the edge of the nerve sheath; the second, the opening in the sclerotic; while the third is that of the choroid.

Still outside of this series of rings, and now and then en-

Digitized by Google

croaching on them, is often found a band of pigment. This is perfectly physiological, but is frequently mistaken for a pathological change. It may be only a line, or in the form of a crescent, or a spot, and even lie in patches at irregular intervals; may extend around the disk, or but half or a third way, always contrasting sharply with the white disk. The amount of pigment always being greater near the nerve entrance, the gradual shading off from the dark ring to the rich pink of the periphery of the fundus is very beautiful.

The blood vessels (arteria et vena centralis retinæ) generally pierce the disk at the center, or a little to the inner side, and usually at the same point, though they are sometimes found at different openings. I have observed one case only where in the left eye the artery and vein entered at different points—the artery near the margin of the inner side and the vein in the center of the disk—leaving a considerable space of white nerve surface perceptible between them. There was slight strabismus of the right eye, but the vessels were normal. The arteries are distinguished from the veins by being smaller and of lighter color, and usually pursuing a straighter course to the periphery of the fundus; they also lie above the veins, and often cross and recross them. After crossing the nerve plane they bifurcate and pass upwards and downwards, each artery being attended by two veins. These divide into many branches, and are distributed in all directions over the retina, arching over the region of the macula lutea, the point of keenest vision, where there are no large vessels. The very interesting phenomenon of venous pulsation is often visible in the healthy eye, and is best seen at the point where the vein crosses the margin of the disk. In three cases that I have seen, the pulse was so marked and regular that it might be counted, and showing as plainly as the arterial pulse of the neck and wrist, though not as strong. The theory given of this is, that it is caused by the compression of the vitreous humor or fluid by the dilatation of the arteries, which in its

Digitized by Google

turn reacts and compresses the veins. The flow of the arterial blood is of course from the center to the periphery, while that of the veins is the reverse, the dilatation and contraction being in accordance.

When the venous pulse is very strongly marked, it has a pathological significance, as denoting the state of circulation in the brain, and when accompanied by arterial pulsation, as is declared by some to be the case, it indicates serious cerebral disturbance.

Venous pulsation may be produced artificially by slight steady pressure on the eyeball, thus raising the tension of the vitreous. Albrott, in his new book, doubts the arterial pulse, and says: "I believe the arterial pulse is never visible under any circumstances, natural or artificial;" but probably he refers to the eye in a natural, healthy state.

The retina (tunica nervea) is a perfectly transparent membrane, or as some authors term it, "a translucent continuation of the optic nerve." In dark complexioned persons and under favorable circumstances, it may be seen as a gray film overlying the choroid. It is composed of layers, the most interesting of which is the external or columnar layer, comprising the rods and cones connected with the terminations of the nerve filaments. The retina decreases in thickness from the nerve disk to the periphery of the fundus, and ends in a finely indented border at the outer edge of the ciliary processes. It is separated from the vitreous body by a thin glassy membrane called the hyaloid, or limiting membrane.

The choroid, or vascular tunic, lies between the retina and sclerotic, connected to both by an exceedingly fine cellular tissue. The stroma of the choroid contains a variable amount of pigment cells, filling in the close network of the numerous blood vessels, and, in many cases, where the pigment is in heavy masses, the smaller choroidal vessels are entirely covered over, while in light eyes the pigment deposit being lighter in quantity, the choroidal vessels of even small size may be easily traced. The brightness of the red tint of the fundus is determined by the distribution

Digitized by Google

of the pigment, and varies from a clear yellowish red to a deep brownish red or rust color. The fine mosaic of the epithelium of the choroid gives that beautiful stippled effect so noticeable in the fundus. The arteries and veins are marked by their difference in size and arrangement, but would not be detected by their color. The smaller veins, in a peculiar manner, curve round from all directions, and form a series of whorls—a larger vein being their center—that unites with one still larger, and that with still another larger, which conveys the blood to the ophthalmic vein. The arteries take a more direct course, and ramify in all directions, and compose a layer of network beneath the veins and separate from them.

The sclerotic or outer coat of the eye serves to give and hold it in shape. It is a dense, white, opaque, and nearly inelastic membrane, the posterior portion being much thicker than the anterior or part nearest the cornea. It is pierced near the center by the optic nerve; the fibers of the nerve sheath and the membranous tissue which separates the bundles of nerve fibers, blending with it at the margin, and giving the surface of the disk a minutely dotted gray appearance, and round this lamina cribrosa the nerves and blood vessels pass in to supply the inner parts of the eyeball.

All diseases of the eye are likely to come under the observation of the general practitioner; those especially that are connected with other diseases, of which amblyopia is but one of many symptoms, as in Bright's disease, apoplexy, many cerebral diseases, and that form of glaucoma which sometimes attends erysipelas of the face, the atrophy of the optic nerve, that often accompanies or follows typhoid and scarlet fevers. All these, and many others, come first under the care of the family physician. Away from our cities and large towns there are no specialists to call in consultation, and the practitioner, if unfamiliar or wholly unacquainted with the use of the ophthalmoscope, must often send the patient on a long, tiresome, and expensive journey to obtain the advice and help he had a right to expect from his family physician; or, if he is not honest enough to say he does

Digitized by Google

not know how to treat the eye, and ignorantly treats an organ so delicate, the result may be either loss of sight to the patient, and loss of confidence to the physician, or such a course may cause a fatal delay, when, had the patient had skilled and proper care in the early stage of the disease, or no treatment at all, sight might have been restored.

Glaucoma, that terrible acute form of disease, coming on as it does, so suddenly that one may retire at night with good sight, and in the morning be unable to distinguish light—intense pain of both eye and head, the eye hard as marble, the pupil dilated and immovable—all these are symptons full of meaning to even the unassisted eye of an experienced physician; but it will not do to perform iridectomy without further assurance of the diagnosis. It may be only a severe attack of neuralgia, but with the ophthalmoscope we can have that surety. The examination shows an excavated disk, a greenish glow or color, the arteries small, and containing but little blood, while the veins are larger than normal, turgid, engorged with dark, almost black-looking blood, or tortuous, and sometimes even beaded in appearance. The blood vessels seem narrowed to a point or beak, and hook over the edge of the cupped disk, disappearing below it perhaps to appear again only in part. The sclerotic and choroidal rings show as a broad belt of yellowish hue, or a dirty white color, and the whole fundus is deeply red, and gives the impression of its being inflamed. This degree of the disease being found, instillation of atropine will not avail, but only aggravate the trouble. No remedy will relieve, and the only and best thing to be done is the operation for iridectomy, and that the sooner the better for the comfort of the patient and the chance for an ultimate restoration of sight.

The great value of the ophthalmoscope is also undeniable in that much dreaded form of nephritis, Bright's disease, recognized in the eye as retinitis albuminuria—the changes there being so characteristic and peculiar that without examining the urine it might be confidently determined, and taken with the other well known symptoms, is conclu-

Digitized by Google

sive. In the first stage there is hyperæmia of the disk and retina, dilatation, and darker color of the veins, while the arteries appear normal or but slightly shrunken. A blue or grayish haze seems to envelop the disk, making the outline indistinct, and extending over the surrounding portion of the retina. The sclerotic and choroidal rings are nearly invisible, and the disk seems blended with the retina without the line of demarcation. There may be ecchymosed spots of blood, or even small patches, lying near the walls of the veins, and the smaller vessels not usually visible become so distended as to be plainly seen. Both eyes are generally affected. As the disease advances certain yellowish white spots appear with numerous extravasations of blood in the layers of the retina, and central vision is obscured. The arteries are now decidedly diminished in size, and show a white line. The veins are darker, irregularly dilated, and more tortuous, while the veinlets assume a spiral course. The disk is infiltrated and swollen, and the hemorrhagic, as well as white patches, center around it, sometimes encroaching upon it. Whitish streaks radiate in the external layer of the retina, between the bundles of nerve fibers, probably the tracks of blood extravasated in the earlier hyperæmia, and dots of pigment are scattered here and there.

Still later all these changes remain in an aggregated form, the exudation has become still more opaque, and of a reddish, yellowish, or cream color, and the disk is wholly obscured. The arteries have dwindled to mere threads, the smaller ones are entirely obliterated, the veins, large, black, and engorged, are now and then hidden by the effusion, appearing as if cut off, or turned down into the deeper tissue, while the blood patches are large and very numerous. The white spots and patches have coalesced with the blood spots into a broad zone around the disk. Around the macula lutea the small, white, glistening spots assume a stellate arrangement, taking the yellow spot for a center, and look as if laid on with the fine point of a brush.

This peculiar arrangement of these small, bright, white

Digitized by Google

dots around the yellow spot, with the broad band of glistening white in the region of the optic disk, are the two most characteristic signs of this disease, as seen in the eye. At last there comes a decided change in the vitreous, which prevents a view of the fundus, and atrophy of the disk and retina end the scene.

In favorable cases the effusion may become absorbed, and the changes wrought in the choroid may now be studied. The pigment is found to be washed away in some places, allowing the choroidal vessels to stand out in clear relief against the white sclerotic. In other places there are reddish yellow patches edged with a heavy, irregular border of pigment cells. Again, the pigment is piled up in thick layers, forming scattered black spots of various sizes. Sometimes the inflammation has been of so long duration that sclerosis of the choroidal vessels has taken place, and show the distinctive well marked white line.

Atrophy of the optic nerve is another cause of amblyopia, and cannot be determined without the ophthalmoscope. The loss of sight may be gradual, or come on suddenly after an acute attack of cerebral disease, or it may be the result of a tumor, or an abscess in the brain or orbit.

I saw a case not long since, of a stout, healthy boy, thirteen years of age, of healthy American parents, in the country, who had, previous to my seeing him, been suffering for three weeks with what proved to be an abscess in the upper part of the orbit of his left eye. It had opened spontaneously through the upper eyelid. In a short time the inflammation subsided, the discharge ceased, and the eye looked clear and natural, but sight was gone. On examination with the ophthalmoscope, I found the optic disk of an opaque chalky whiteness, and the edge of the nerve sheath, the choroidal and sclerotic rings, were involved, and made the disk appear larger than normal. The minute arterial twigs of the nerve surface and the small branches of the retinal vessels had disappeared. The *arteria et vena retinæ centralis* were much reduced in size, and the entire retina anemic. This child had come a long distance with

Digitized by Google

his mother, at an expense the family could ill afford, only to be told that vision in that eye was entirely lost, and no remedy or operation could restore it. Had their village doctor known how to have distinguished this state of things with the ophthalmoscope, he could have saved their anxiety, journey, and expense, and told them in fifteen minutes what it took them three days to find out.

Optic neuritis, resulting in atrophy, may follow blood clot, syphilitic deposit, or a hydatid cyst, etc., and is so liable to accompany every disease or lesion of the brain, that the eminent practitioner, Albrott, declares: "It must be looked for in every case of cerebral disease, especially in cases of cerebral fever;" and also, "that the geographical relation between the optic nervules and the vessels is very curious, and unparalleled anywhere else in the human body, and that this and the further peculiarity of the structure of the optic trunk leads me to look upon it with its rich blood supply as a more important offshoot of the encephalon than any ordinary nerve would be, and more likely to offer important indications of its varying states." The several forms of optic neuritis are interesting and instructive to the ophthalmic student, and it is very desirable to be able to diagnosticate between neuritis ascendens and neuritis descendens, the neuritis of cerebral disease, and that of traumatic origin, and that produced by mechanical means. To do this requires a knowledge of the other symptoms and history of the case that a general practitioner has larger opportunity for gaining than the specialist.

The common diseases of the *choroid* are easily diagnosticated with the ophthalmoscope, most of them being of an inflammatory nature.

Last Winter I had the opportunity of studying a case of *acute choroiditis*. A young man, an entry clerk in a warehouse, twenty-three years of age, healthy, and of good habits, came to the Infirmary for advice. He stated that he was employed in writing all day by gaslight, and often a part of the evening, bending his head down continually. For some time previous he had suffered from severe frontal

Digitized by Google

headache; his eyes felt tired and ached, the sight often becoming dim for a few hours at a time. One morning, after having written late the night before, he found on waking that he could not see at all with the right eye, and with the left but very little. There was no pain—only a sense of fullness and discomfort in his eyes. In great alarm he came at once to consult the surgeons at the Eye and Ear Infirmary. His eyes looked natural outwardly; the mobility of the pupils was unimpaired, and there were no external evidences of inflammation. The ophthalmoscope revealed the trouble—there was choroidal hyperæmia, slight serous exudation in places between the choroid and retina, particularly to the inner side the disk and the retina for a few lines around it, seemed a little hazy and indistinct, but the vessels appeared normal and the retina transparent, except in the effused spots. The most marked appearance was the disturbance of the pigment, and the consequent exposure of the choroidal vessels, large and small—even the vena verticosa showing finely. Patches of pigment, or places where it was very thin, or gone altogether, of all sizes and shapes, were scattered, or rather seemed to float over the whole field of view, varying in color from the pale yellowish pink tint, where the sclerotic could almost be seen, to dark and reddish black spots, that might be either exuded blood or piled up pigment cells; and still other large yellowish spots of irregular oval form, with a deep indented border of pigment on the inner edge. There were also dots and streaks of pigment and half-absorbed blood, making up a curious and confused picture. The patient was assured that with rest and care of his eyes, his youth and good habits being in his favor, the inflammation would probably soon abate, the blood in time become absorbed, and partial or full sight be restored. In about two months this prognosis was verified.

Now and then a patient comes to the practitioner complaining of night-blindness, and that he cannot see well in the twilight, and is quite blind later in the evening. Both eyes are usually affected, but no external changes appear, except

Digitized by Google

in some cases the pupil is small and anterior chamber shallow. With the ophthalmoscope we discover peculiar large, black masses of pigment lying near the retinal vessels, and following their course as narrow black lines, or as spots with two or three prongs or prolongations radiating from them, resembling the bone corpuscles. At the divisions of the vessels the pigment fills in the angles and courses along their walls for a few lines, giving a stellate appearance. The vessels become very much contracted, or are atrophied, and the retina, deprived of its proper supply of blood, also becomes inactive and atrophied. In some cases where atrophy of the optic nerve takes place, the vessels remain transparent, but very small.

This disease of the retina (*retinitis pigmentosa*) is frequently congenital and hereditary, though sometimes the result of inflammation. It is easily diagnosticated by the peculiar marked form of bone corpuscle pigment deposit, and is seen to commence at the periphery of the fundus, progressing more or less slowly, narrowing the field of vision, till at mature age the sight is entirely gone or reduced to the mere discerning of large objects.

Injuries of the iris and cornea are very common, and liable to occur in any village, especially among stonecutters and machinists, and need immediate attention. A case in point came not long since to the Infirmary. Peter Quinn, Irish, aged 27, stonecutter; while at work drilling was struck on the upper eyelid of the right eye with a bit of iron or stone which penetrated the cornea. There was no pain for five hours, but after that time the pain and soreness was intense, with entire loss of vision. The accident occurred at four P. M., and the next morning at ten he was under examination by oblique illumination, but even in that short time the conjunctiva was greatly inflamed, the cornea misty, and a considerable amount of pus (hypopium) in the anterior chamber. The iris was discolored and pressed back upon the lens, to the capsule of which it was

Digitized by Google

fastened by lymph; the pupil was closely contracted and immovable. On using the ophthalmoscope only a slight reflex could be obtained, but under skillful treatment he made a good recovery.

Another, a machinist, was less fortunate, a Frenchman, 19 years of age; while filing was so unlucky as to have a piece of the steel enter the cornea of his left eye, near the edge of the pupil, nicking out a bit of the iris, and lodging in the margin of the lens; there was but little apparent inflammation, and the pupil slowly dilated under atropine. The ophthalmoscope showed that the injury to the lens was of a very serious nature. At the point of the wound was seen a whitish opacity of exudation and numerous striæ, like fine black lines, radiating from the center of the lens, indicating the presence of the foreign body, and probable cataract, if not ultimate enucleation as a final result.

There are several other affections of the eye which I should like to describe—such as the detachment of the retina, a frequent cause of blindness, and the amaurosis, caused by the excessive use of tobacco or alcoholic drinks; that of lead poisoning, and also that of diabetes—but I trust enough has been said to convince the unprejudiced mind that the ophthalmoscope may be of great value in general diseases. In the class of diseases peculiar to women, the ophthalmoscope opens a large field for investigation, and may prove a valuable help in the pathology of those cerebral troubles so frequent among delicate women who are suffering from some of the various forms of uterine disease. Some degree of amblyopia is often present, and the complaint is that they do not see well, their eyes ache, and feel as if pressed out of the orbits, and tire so quickly when used for sewing or reading. A close sympathy is known to exist between the brain and uterus, and the subject is one of especial interest and importance to women physicians, and they have the largest opportunity for observing and studying the relation and connection of the two, and the high incentive of adding to gynæcological science in a direction where but little is yet known.

Digitized by Google

I have made it a point to examine the eyes in every uterine case, and had at one time under my care five cases where the retinal appearances were similar and peculiar. In three of the cases there was menorrhagia, constant headache, frequent dimness of sight, general debility; in the other two, chronic endo-metritis with profuse leucorrhœa and severe headache. In all the ophthalmic appearances were similar, varying only in degree, the disks being more or less anemic and ædematous and the retina showing a marked smoky cloud, or light gray mist around the disk, and in the intervals between the vessels. Under tonics, alteratives, and local treatment the health improved, and the smoky cloud broke up into shreds and patches, fading out at the edges and periphery, till at last, in one or two of the cases, it disappeared entirely, and the sight was restored good and strong as ever, and the headache ceased to trouble them.

The only theory I have to offer in regard to this appearance is that it may be due to a serous exudation into the granular layer of the retina; for had it been between the choroid and retina it would have produced detachment of the retina; and had it been a cloudy vitreous the entire fundus would have been more or less obscured, and the appearance of the vessels quite different; had it been into the internal layer of the retina, the vessels would have been more obscured, but the appearance was that the exudation was behind, rather than on a level with the vessels, as they seemed a little forward of the normal focus. These patients all had light eyes, in different shades of blue and gray, and were examined with the ophthalmoscope every ten or fourteen days. The media were clear, and all else was normal with the exception of the disk and retina.

Albrott says: "There are without doubt disorders of vision which appear attributable to menstrual disorders," but that he has "examined women innumerable" without discovering any such coincidences; but as other equally eminent ophthalmic surgeons do not assent to Albrott's conclusions in this matter, it may be that it is reserved for the

Digitized by Google

encouragement of some woman physician of earnest patience, keen perception, and intuitive judgment, to discover for science that which so good an observer has failed to do. It may not be saying too much to predict that within a few years every first-class physician will be expected to use the ophthalmoscope in general practice, and to know the value of what he or she may see with it, just as now, no intelligent patient is satisfied with the diagnosis of a physician who does not use the stethoscope in heart and lung diseases.

It is indeed true that it requires much time and practice to become skillful in using the ophthalmoscope; but the delight of the study and the great benefit not only in training the eye to note minute objects and slight changes, but the positive help it may often prove in an obscure or doubtful case, will amply compensate for the time and energy spent in acquiring a knowledge of its capability.

Digitized by Google

EMBRYOLOGY.

A SKETCH OF ITS DEVELOPMENT AS A SCIENCE.

BY C. ANNETTE BUCKEL, M. D.

The generation of life must always have been a fruitful subject of inquiry, but we have no record of any scientific investigations made before the time of Aristotle, the father of natural history. In his work on the history of animals, we find that he not only had a large museum, filled with rare and curious animals from all parts of the then known world, supplied through the liberality of his pupil and friend, Alexander the Great, but that he took opportunities in traveling to study the nature and habits of many in their own native haunts, undisturbed by the surroundings of an artificial life in captivity.

His observations on bees, ants, spiders, and many of the curious marine animals, correcting popular errors in regard to their development, sex, etc., prove that he not only knew what had been previously learned and taught, but that he searched in every avenue for information, and investigated, experimented, and theorized. He speaks of jelly fishes, which he called acalephæ, on account of their stinging properties; of polyps, and their increase by gemmation or budding; and he reasoned on the animal nature of sponges, though he finally classed them with plants.

In his work on generation he speaks of origin by spontaneous evolution—as mites in cheese, worms in the center of sound fruit, parasites living in other animals, etc.; of origin by gemmation or budding, and divides the higher animals into two classes—the oviparous and viviparous. He described the organs concerned in reproduction, the

Digitized by Google

functions of each, and the influence which each sex has on the offspring, but does not seem to have recognized the nature of the ovaries in the viviparous, though he described the development of the egg in the oviparous. In his account of the development of the chicken, he speaks of the "punctum saliens" as the first organ formed, so he could have known nothing of the earliest stages. Aristotle believed matter to be eternal, and endowed with a vital principle. In sexual reproduction he taught that the male furnished the animating, vitalizing principle, while the female furnished material for nutrition and growth, but he did not attempt to explain very minutely the nature of the material or the manner of its production in either sex, and we have no evidence that he ever saw a human embryo.

It was more than two thousand years before any fact of importance was added to Aristotle's records. His followers contented themselves by studying his works, and trying to explain what they could not comprehend, by endless discussions and disputes, instead of following his example—to study and investigate nature for themselves.

Not until Albert the Great, Bishop of Ratisbon, born in 1193, styled afterwards the Buffon of the Thirteenth Century, do we find any record of material progress. Albert arranged a new system of classification, placing the sponges among animals, where Aristotle had hesitated to place them, and putting man apart "as the only link between God and the earth," because "man has in himself the intelligence by which he can raise himself above the world." He believed in the immutability of species, but corrected many false views which had been handed down to his time, and seems to have been an independent thinker—a rare phenomenon in those days of priestly intrigue and intolerance—but did not add much to Aristotle's knowledge of embryology.

There are a few compositions of the middle ages called Bestiaries and Volucraries, preserved in manuscript, in the Royal Library in Paris. The following extract, translated from one of these works, written in 1208, by William, a

Digitized by Google

distinguished Norman scholar, will illustrate the kind of knowledge to be gained from them. William begins his natural history as did most of the other writers of those compositions, by a description of the lion. He says:

"The lion inhabits high mountains. When he sees himself pursued by the hunter, he effaces with his tail all traces of his steps. When he sleeps, he has his eyes open. The lioness bears her young on the ground, where they remain motionless three days. They are abandoned by her. The lion comes and breathes on them, when they are restored to life. It is thus that Jesus Christ concealed so well his coming on the earth that the demon himself did not know of it. Three days also, like the young of the lion, He was deprived of life, but God the Father caused him to go forth, and he arose gloriously."

The Bible and biology were thus reconciled by the scientists of the thirteenth century. The discovery of the new world affected the learned men of that age with the same bold spirit that thrilled all classes. Anatomists, who must be the pioneers in all biological progress, broke the superstitious bonds that had so long fettered them, obtained the repeal of laws which forbade the use of any but executed criminals for anatomical purposes, and soon raised anatomy to a high place among the sciences. Vesal, Eustachi, and Fallopia raised an enthusiasm that extended from Italy to France and England. Fabricius ab Aquapendente, called the Nestor of anatomists, a pupil of Fallopia, and Professor in Padua, was one of the most brilliant men of his time. His publications in 1600 and 1604 contained the first attempt to give the development of the chicken, mammalia, and man. It is most probable that his celebrated English pupil, Harvey, gained from him that knowledge of embryology which must have given him some interest and enjoyment during his long struggle to establish his great theory of the "circulation of the blood;" for, in 1652, only five years before his death, he published his "Investigations Over the Generation of Animals," containing special descriptions of

Digitized by Google

the development of the chicken and mammalia, but adding very little to that already made known by his illustrious master, Fabricius.

In fact, the eye of man strove in vain to penetrate the mystery shrouding the beginning of all life, until aided by that magic key, the microscope, which, as it were, opened the inner door to the temple of life. Then was disclosed the wonderful living mechanism which regulates all the functions of the organism. Men like De Graaf, Swammerdam, Leenwenhoeck, Malphigi, and others, made a brilliant series of discoveries which prepared the way for Wolff, Pander, and Von Baer, to make a firm foundation for future investigations.

Regnier de Graaf's work on the nature and function of the ovaries, his actual demonstration of the ovum of a rabbit in the Fallopian tube, his dictum, "*Omne vivum ex ovo*," were at the dawn of a new era.

Swammerdam's wonderful dissections and preparations of insects in their various stages of metamorphosis, confirming Redi's conclusions concerning the origin of all insects from eggs, thus adding to the evidence in favor of De Graaf's dictum, "*omne vivum ex ovo*," did not procure for him the favor of that distinguished physiologist. It was not until his Biblia Natura was translated into French that it received the attention it deserved. His countryman, Leenwenhoeck, by his discovery of the spermatozoa, or rather his confirmation of his student's discovery, was more fortunate in arousing the attention of the whole learned world.

The most exciting discussions were carried on over the nature and office of these little animalcules. The evolutionists on one side claimed that the future being existed perfectly formed in these germs, only so minute it could not be detected with the best microscopes, and that its development was only a process of unfolding or simple growth. On the opposite side were those who supported the theory of epigenesis, which taught that no organs existed preformed in the germ, but that they were devel-

Digitized by Google

oped in succession from the material furnished for nutrition and growth.

This discussion was carried on with great warmth, if not with personal bitterness, for thirty years, and very little progress was made by any of the disputants. In the meantime a German, Caspar Friedrick Wolff, who was living at St. Petersburg, was patiently watching the development of the embryo, and at last succeeded in tracing the alimentary canal back to its primitive condition. The problem was solved—one organ at least did not exist preformed in the germ. He then traced the kidneys back to their provisionary form, now called after him the Wolffian bodies; and then, in 1759, published his "True Theory of Generation." He was led to adopt this theory through his discovery that the whole plant, except the stem, was only a changed leaf. He reasoned that the same law might hold good in regard to animals, as so many other laws of growth were of common application. With this thought he commenced his investigations, and after long and patient watching obtained the proof of his theory so far as two organs were concerned.

His first publication being in the Russian language, remained almost unknown until 1812, when Meckel translated it into German and brought it to the notice of the scientific world. It did not gain many disciples until still later, when Pander, carrying Wolff's investigations farther by an extensive series of observations, proved his theories correct, and succeeded in impressing physiologists generally with a sense of their importance. Pander not only traced the development of the embryo from a membrane, according to Wolff's theory, but showed that this germinal membrane was composed of two layers, from each of which certain tissues were formed. Von Baer was the first to present the plan of the structure of the entire embryo with sufficient proofs to make it thoroughly established, and to Von Baer belonged the honor of first demonstrating the three layers of the germinal membrane, and the processes

Digitized by Google

by which the whole embryo is built up, so clearly as to give a firm foundation for the establishment of a new branch of science—embryology. Carl Ernst Von Baer may therefore be considered the founder of the present system of teachings in embryology, although Caspar Friedrich Wolff had long previously developed the true theory and partially proved its truth. Oken and Kieser, who published in 1806 treatises on the development of the alimentary canal from the umbilical vesicle, knew nothing of Wolff's works.

At the beginning of this century embryology enlisted the interest of the most distinguished scientific men. Oken studied the development of the vertebral column and the cranium, and was the first to show the relation of the cranial bones to the other bones of the vertebral column, a subject in which Goethe was intensely interested, who, in confirmation of his own theory, as to the relations of the human skull with that of lower animals, discovered the middle upper jaw bone in the human skull. Meckel contributed important material, not only by his translation of Wolff's works, but by his own investigations, especially in regard to monstrosities or congenital deformities, which threw much light on normal development. Dollinger and d'Alton, the elder, also gave special attention to this subject, assisting their celebrated pupil, Pander, in his extensive experiments and investigations. D'Alton, the elder, made the beautiful copper-plate engravings which illustrated Pander's works.

Von Baer began the investigations in 1819, which he continued until 1827 before publishing the results, which were given in his work entitled "Observations and Reflections on the Development of Animals," published in Konigsberg, in 1828. A second part was published in 1837, after eighteen years of hard study. Von Baer was the first to demonstrate the mammalian ovum in the ovary, De Graaf having mistaken the follicle for the ovum. Kölliker says with enthusiasm, that Von Baer did all it was possible for man to do with the means at his command. With the improvements in microscopes came new discoveries. Schlei-

Digitized by Google

den found that all vegetable tissues were originally formed from cells. R. Brown discovered a nucleus in the vegetable cell in 1831, and Schwann, in 1838, proved that animal tissues were also developed from simple cells, and that the blasto-dermic, or germinal membrane, was itself composed of cells.

Purkinje discovered the germinal vesicle in the bird's egg, while Coste, in Paris, and Wharton Jones, in London, about the same time, discovered an identical structure in the egg of the mammalia, which was then called Purkinje's vesicle. Wagner observed within Purkinje's vesicle a constant factor, which was called Wagner's spot, or the germinal spot.

Thus all the different parts of the ovum were brought to light, but the origin of the germinal membrane was as yet unknown. Swammerdam, in 1685, had observed the segmentation of the frog's egg; but it was not until 1840 that Bischoff and Reichert showed that these segmentation globules were the source from which the primitive cells of the blasto-dermic membrane originated. Kölliker, in 1844, was able to demonstrate that all the cells in the different tissues of the body could be traced back to parent cells in the blasto-dermic membrane. Remak extended this law to all the normal adult tissues, and showed that cells were never developed except in direct descent from parent cells; and Virchow, the celebrated pathologist, created a new era in pathology by tracing this same law in all pathological formations; even cancer, which had been considered as a foreign growth, like a fungus, was shown to be only an extension of normal cell growth beyond its normal limits.

The leading principles and facts in embryology have thus been established, one after the other, by the labors of many different distinguished individuals, only a few of whom are mentioned in this brief sketch, the German and French physiologists taking the lead, though Horne, Lee, Bradford, Thompson, and other English doctors made valuable contributions, while naturalists in all parts of the world have, by their researches, confirmed the general application of

Digitized by Google

these laws to the whole animal kingdom. In our own country, Clark, Agassiz, Hyatt, Packard, and others have made valuable original studies on this subject; while the writings of Darwin, Haeckel, Huxley, and Tyndall have done much to interest people in the results of scientific labors.

There are at present three different methods of reproduction acknowledged:

First—Fissiparism, or reproduction by division of the parent.

Second—Gemmation or budding.

Third—Ovulation.

Most, if not all species which are propagated by fissure and budding, also produce true ova, so that De Graaf's dictum, "*Omne vivum ex ovo*," may yet prove to be a universal law.

A second law, that all ovules require the influence of a fertilizing fluid containing spermatozoa before an embryo can be developed, has some apparent exceptions, in what is called partho-genesis. It is known that certain insects may lay eggs which will develop without impregnation. The common aphis, or plant louse, has been known to produce nine generations from the first impregnated ovum; but most physiologists consider this as an extension of the fertilizing power, perpetuated from the mother to the offspring.

Setting aside these apparent exceptions, we may consider the following propositions as established:

First—All organized living beings proceed from eggs.

Second—All eggs require the influence of a fertilizing fluid containing spermatozoa for the development of the embryo.

Third—This fertilizing fluid and egg may be produced by one individual, or each may be furnished by different individuals, thus making the distinction of sex.

Fourth—Segmentation is the first stage in the development of the embryo, and this may take place without impregnation.

Fifth—The blasto-dermic, or germinal membrane, is

Digitized by Google

formed from the segmentation globules, but never without previous impregnation.

Sixth—There are three layers in the germinal membrane—external, internal, and middle.

Seventh—From the external layer are developed the central nervous system, with all its connecting nerves—the retina (crystalline lens, choroid coat of the eye), the skin with all its appendages, such as glands, hair, nails, etc., and a part of the amnion. From the middle layer are developed the heart and all the vessels of the body, with all the muscles and bones and their connecting tissues. From the internal layer is formed the lining to all the mucous membranes of the body.

Eighth—In tracing the development of the higher classes of animals, we have manifest indications of the types of structure of the classes below each of these higher.

Ninth—These types of structure appear in the same order of succession in the embryo, as the class of animals which they typify appeared in their maturity at different periods of the earth's history.

From these propositions, which have been clearly demonstrated, it is easy to see that embryology must be the guide in all attempts at the true system of classification, and that it is only by the study of the embryological development of the different organs and tissues, in the different classes of animals, that a true comprehension of their functions and relations can be obtained.

Not only is this true in regard to anatomy and physiology, the foundation of all medical studies, but embryology must throw much light on pathological formations, on hereditary diseases, congenital deformities, prenatal influences, and many other subjects of the greatest practical importance to every scientific mind, especially so to every conscientious physician.

It is to be hoped that our Universities and Medical Colleges will soon consider embryology worthy of more consideration than has yet been given, and our young students will take advantage of this field for original research

Digitized by Google

and important discoveries, and thus aid in perfecting this, as yet, young science.

Text books on this subject are few. Kölliker and Schenck have published small works on this subject in the German language, but I know of no other works attempting to give a general sketch even of the science as it now exists. Many valuable monographs are scattered through the scientific journals of Europe and America, awaiting some master hand to bring them together. Whoever has time to search for them will find it a most fascinating employment, and will be astonished at the amount of labor done by men whose names, like that of Mons. Gerbe of Paris, are seldom seen or heard, yet are worthy of the highest respect and honor. They work from a love for science and a desire to add to the general fund of knowledge for the world's benefit.

Digitized by Google

ON MENTAL INFLUENCES.

BY G. W. DAVIS, M. D., OF CHICO.

Every period of human life, from cradled infancy to the infirmities that pave the path of second childhood, is surrounded by numberless objects, circumstances, and influences that make deep and abiding impression upon the mind. The multiplicity of subjects in the different kingdoms of nature, and the ever varying interests and objects by which man is surrounded, and with which he is daily and hourly in contact, invigorate his imagination, challenge his attention, direct his associations, invite his contemplation, and give rise to a variety of mental emotions that may be more or less intense, and leave traces corresponding upon his physical organization. The balmy days of childhood and youth treasure the mind with ideas, whether false or true, that float down the current of time, causing happiness or misery in all the subsequent stages or conditions of life. The child acquires early in life the habit of believing in the existence and reality of things contrary to the dictates of reason and the plain truths of philosophy, and thus lays a broad and firm foundation for the fabric of duplicity and credulity that strengthens with the powers of manhood, and to which he ever after resorts to shield himself from the force and influences of truth and reason.

Such are the preliminary elements of his education, that he has a peculiar relish for novelties and whatever is mysterious and inexplicable. Fearful omens absorb his contemplation by day, by which fancy threads the fearful labyrinths of the future. The zephyrs of evening his imagination converts into the whispers of demons. The fracture of a

Digitized by Google

mirror or the howling of a dog are the premonitions of sickness and death; and his mental emotions may be so intense as to prove the truth of his delusions.

With such preliminary elements of education of so great a number, what can be the mental acquisition and moral fruits of manhood? Let the history of ages break upon your ears in reply. Let the duplicity of the nineteenth century be regarded as its legitimate offspring.

Who can measure the extent of such mental delusion, and limit its influence upon the human system in originating diseases, functional and organic? The preliminary elements of education thus briefly alluded to are conspicuous in all grades of society. They give character to the great mass of communities in all countries.

Hence the speedy growth of error and credulity and superstition. Hence the dizzy heights that mark the soaring flights of quackery. Hence the remarkable cures wrought through the medium of imagination, and success that frequently inspires hope and confidence in charms and incantations.

> "There are more things in heaven and earth, Horatio,
> Than are dreamt of in your philosophy."

These expressive words of admonition were given to the world more than two hundred and fifty years ago. The unparalleled progress of science, as well as the marvelous development of art, have but established the sublime vision of its author. We may yet ascend the highest scientific pinnacle and view the unexplored fields of science, and prophetically declare the wonders which future centuries will yet bring to the devotees of scientific research and knowledge. In taking a retrospect of medical history, how cheering the thought, as we are enabled to descry in the past, men in the different decades of time who were prodigies of genius, scientific attainments, and professional skill, and who were the great centers around which revolved all the lesser lights, in whose reflection they had their scientific existence. Boerhaave's Humoralism, Cullen's Nervous Doctrine, Clutterbuck's Cerebral Doctrine, Broussais' Physi-

Digitized by Google

ological Doctrine, and Cook's Vena Cavaism, have each had their period of power and reign, and in their respective times have required and engrossed the professional mind so as a consequence, upon their doctrines was based the practice during the periods of their dominion. We emerged from the "sea of blood" in which the Vena Cavaism of Cook deluged us, and are now led on by the expectant and asthenic waves of the philosophy of the present time until it has found its acme in the *vis medicatrix natura* of Sir John Forbes, or the more absurd and radical doctrines of Hahnemann. The great minds which have illuminated the medical horizon and arose to distinction and preferment at different epochs of time, though generally either adherents of a favorite philosophy or originators of some new doctrine, were minds amply capable of the highest culture and the most extended scientific acquirements, the most accurate observations and philosophical deductions. The name of Marshall Hall has become familiar to every student and investigator of the human system throughout the world. His investigations of the anatomy of the nervous system, and his discovery of hitherto unknown and complex functions, will perpetuate his name in all time to come, and the springing up of new modes of treatment, the result of his discoveries, is daily relieving hundreds of our fellow men in every nation and country.

These are the men we delight to honor, though many of their doctrines and theories live only on the page of history. They have contributed greatly to the advance of science. They merit the gratitude of the world as cultivators of science and as philanthropists. But, too great a majority of the profession are influenced and controlled by the prevailing doctrines, theories, and systems of the day, and they are too apt, I fear, to follow the established practice without investigating the scientific basis upon which such practice has been established. We are not the independent thinkers we ought to be, but more the inanimate

Digitized by Google

reflectors of the systems and practice of eminent men. I apprehend that a very large number of the profession pay less attention to, and understand less of, the influence which the mind exerts over the body in health and in disease, than of the relationship of any other part of the system. And whether it is because they consider this part of the system unworthy of their attention, or the functions too mysterious for their comprehension, or whether, in their opinion, such investigations do not tend to practical results, this is evident, that this highly important subject is too much neglected by the profession, greatly to the detriment of science, and to the honor of our noble calling.

We shall now briefly notice the power of the mind over the body, and in citing a few instances of its mysterious influence in the production or cure of disease, and the effect of fear, anger, hope, and the like, upon the body, I do not desire to be thought too credulous, or, perhaps, superstitious, because I am inclined to believe the results. Though not capable of demonstrating in all cases the mysterious laws of life, it is the duty of every physician, as far as possible, to understand the operations and manifestations of the mind. Not only should he do this to promote the cure of disease, but in his daily contact with parents, and delegated instructors of children, as well as the children themselves, he should be the medium of transmitting those proper elements of education, that the youthful mind may become imbued with solid facts, not fancy, with the importance of cultivating and exalting reasoning faculties, not a perversion, or almost complete destruction of them, through the absured training by those who are ignorant of this wonderful system. There can scarcely be a disease mentioned where he may not find such knowledge not only beneficial but essential. He may scientifically use such knowledge to excite a lively faith in a desponding and yielding spirit; he may also know how to hold forth the balmy and healing influence of hope, when and how to quiet the impatient and restless spirit, and at a proper moment, and in a proper manner, to secure resignation to

Digitized by Google

the "dying sufferer when hope no longer lives." And when the mind itself becomes diseased, when its faculties become "scattered like grains of sand before the storm," he alone can hope to collect and direct the shattered organ, who has studied the mind and its operations in health. It is here that the empiric, often more acute and always less scrupulous than the scientific physician, is enabled to dupe the morbidly superstitious or too credulous invalid by allaying his fears, obtaining his confidence, exciting his imagination, and bidding him hope that through his catholicon or panacea which is capable of prolonging life to an indefinite extent and of curing all diseases, his illness will vanish as by magic before its use. No one, I think, will deny that often real diseases, and frequently fancied ones, vanish before these empirics, who often unwittingly cure the patient through the powerful impression upon the mind, which, of course, is attributed to his infinitesimal doses or his secret panacea. The mind though self-existent, in its manifestations or operations depends largely upon external influences, as well as upon the body of man, and yet it exercises a dominion over the elements around it, and also over the body.

We all know that upon the health and vigor of the body depend the capacity and energy of the mind. A body worn down by disease and racked with pain renders the mind imbecile and often "dethrones reason." "The Jesuits, well versed in the subject of education, showed much sound wisdom in always ascertaining the character of the mother when they received a new pupil. They believed in the influence of the mother over the development of the embryo." Those who disbelieve that the mother, through a powerful impression of fear, or sudden emotion produced upon the brain, can have any influence upon the child through the nerves, tell us that there is no direct connection between the nerves of the mother and the child, and that there is no direct communication between the two. We know that the nerves and blood vessels have not been found directly to communicate with the child; but how else

Digitized by Google

will you explain the very sudden death of the embryo, the deformity of many children, which cannot be explained from any known law of development; the frequent occurrence of *nævi materni*, which often have their counterpart in substances or things which surround the mother, or, at some time during her pregnancy have made a strong and lasting impression upon her mind, if there is not some intimate, undefined, and controlling connection between the mind and nervous system of the mother and child.

A resemblance has often been traced in children of the second husband to the first, and this seems almost a convincing proof. The young and tender-hearted girl who has wedded her first love, is bound to him by the strong cords of unbounded love and deepest devotion; he for years has been the center of attraction; in him has been concentrated every object in life; every thought of happiness, and every pulsation of his heart, meets with a response in her own. In the change of all mutable things she becomes the wife of another, her soul yet dwelling upon the idol of her heart and her once happy home. Is it strange that under such circumstances the resemblance often should be marked? The Lacedemonians were familiar with this powerful influence, for they placed the beautiful statues of Apollo, Hyacinth, and Narcissus in the rooms of their wives when pregnant.

I could burden this article with a great number of cases showing the effect of mental impressions upon the embryo, but as this is not the special object of this paper, I will relate one very interesting and remarkable case. Dr. Howshipp, an English physician, relates the following: "A woman in a state of pregnancy was frightened in crossing a frozen river. The ice burst and cracked. She was terrified, and when delivered of the child its skin was rent and torn in many places, but had begun to heal up."

The mental emotion—*fear*—is well known in producing, or assisting to produce, certain morbid states of the system, and also in giving relief or assisting to promote recovery in certain or all diseases, mental or physical.

Digitized by Google

Dr. Holland, in his "Medical Notes and Reflections," devotes a chapter to the effects of mental attention of bodily organs. He shows that direct effects follow from consciousness being by a distinct voluntary effort, directed towards organs or parts of the body. Of the force of this statement every one must be easily convinced. Among other instances the state and action of the bowels is alluded to as thus influenced. The attention being concentrated on them sensations previously unnoticed are experienced, and their action excited and quickened.

Sometimes the return of a paroxysm of hysteria is promoted by the fear of the remedy resorted to. The emotion has been known to cure an attack of neuralgia. I have witnessed a violent case of nephritic colic cured by sudden fright. Near four or five weeks ago, in the town of Chico, there occurred five cases of poisoning by eating unwholesome mushrooms—a report of which will be presented to the society by Dr. Dawson. Three of the most violent of these cases fell into the hands of the regular physician. Of these three cases, the one that presented the most favorable prognosis exhibited the greatest amount of anxiety and uneasiness about his recovery, and I am very much inclined to believe that if the physicians of this man had not constantly offered hope and encouragement, both in word and action, notwithstanding they thought his recovery at one time quite doubtful, the patient would have been much worse than he was from the emotion that amounts to a species of fear.

The following case, related by Dr. Paris, shows what a wonderful influence imagination can exert in the cure of disease. As soon as the powers of nitrous oxide were discovered, Dr. Biddoes concluded that it must necessarily be a specific for paralysis. A patient was selected for trial. Previous to the administration of the gas, Sir Humphrey Davy, who managed the case, inserted a small pocket thermometer under the tongue. The patient, wholly ignorant of the nature of the process to which he was submitted, but deeply impressed with the certainty of its success, no sooner

Digitized by Google

felt the thermometer under his tongue than he concluded the talisman was in full operation, and in a burst of enthusiasm declared that he already experienced the effect of its benign influence. The opportunity was too good or tempting to be lost. Sir Humphrey Davy desired his patient to renew his visit on the following day, when the same ceremony was performed, and so on for a fortnight, the patient gradually improving; and he was at length dismissed cured, no other application being used.

The most fatal diseases, and those that frequently bid defiance to rational treatment, are disarmed of their ravages and arrested in their progress simply through the powerful influence of faith and imagination. If these two emotions can be so controlled as to save large communities from the desolation of the most formidable disease, what important auxiliaries may they not be made in the treatment of disease that more readily responds to medication?

The effect of moral emotion upon the genital organs, and through them the whole system, is a subject demanding serious attention. The effects resulting from this source are variable and complicated, and frequently hurry on patients to death's door, while their friends and physician little think of the cause.

The converse of the subject must also be understood, that while these agencies of moral emotions are capable of rolling back the tide of desolation and death, under certain circumstances they may be the cause of perpetuating disease and accelerating death. The criminal has laid his head upon the block for decapitation; his pardon has arrived ere the fated blow was given, but it came too late to save him—his own mental emotions have been his executioner. John Hunter, being contradicted by one of his colleagues at the hospital, was thrown into a passion, and struggled to suppress it, when, with a deep groan, he fell lifeless.

If moral emotions are sufficient to extinguish the vital spark in a healthy man, how indispensably necessary, under certain circumstances, that we guard these emotions when

Digitized by Google

the patient is suffering, for instance, with functional or organic diseases of the heart.

Dr. Thomas Brown, founder of the celebrated Brownsonian system, had a thorny path to fame, and during many years of his professional career met with persecutions and disappointments. His mental emotions and exercises were intense, to which he finally fell a victim, having been able to lecture on the day of his death.

In conclusion, permit me to reiterate, that the physician has it in his power, to a very great degree, to convert mental emotions into agents of life or death. It is no doubt owing to this ability that some possess, during widespreading epidemics, that makes such a striking contrast in the success attending different physicians. One relies solely upon the efficacy of drug treatment, while the other, having no less confidence in that, combines with it no little share of moral treatment. No one who has neglected the influence of the latter can appreciate its worth or fathom its results. Doubtless there have been many cases where the sad and gloomy countenance of the physician has sealed the fatal issue of his patient—cases in which a smile upon his countenance might have enkindled hope and confidence, and have been the cause of triumphant success.

If such be the result of mental emotion, that life and death are their issue, how important that the physician, in the treatment of his patients, should feel their efficiency, control their tendencies, and scrupulously guard his communications and deportment, for upon them frequently depend not only his success and reputation as a medical man, but the happiness of friends, the health, safety, and life of his patients.

Digitized by Google

HYGIENIC EDUCATION FOR THE PEOPLE.

BY M. M. CHIPMAN, M. D.

That at present important branch of medicine called hygiene, of which formerly so little was known, has had its origin, and owes its advancement thus far, principally to the studies, efforts, and influence of the most learned, most experienced, and philanthropic of the medical profession. When the physician has acquired that kind of interest in the practice of his profession that the restoring his patients to health in order to alleviate suffering, and bring relief and joy to their friends and families, has become one of the prime motives of his labor and vigilance, then his love and sympathy for his fello-wmen induce him to look beyond the present suffering, and he finds an additional reward in devising the ways and means of averting the pestilence and rendering innoxious the deadly contagion, and in instructing the people in those rules of life which conduce to more perfect development and the better preservation of health.

How much better the careful preventive measure than to risk the invasion that brings suffering and decimation. How much better to give the wise counsel that teaches to avoid disease than to rescue the stricken victim, perhaps shorn of beauty, and with lessened capacities for enjoyment and usefulness. But how often have the most disinterested efforts, and the most salutary measures of the physician and hygienist been rendered abortive by the ignorance and want of appreciation of those whom these measures were intended to benefit.

Among the older civilizations, where the one-man power yet rules supreme, or where but a small proportion of the people participate in the affairs of government—those being

Digitized by Google

of the educated class—it is an easy matter to convince the law-making power of the utility of sanitary regulations, and of the necessity of prohibiting all but such as are thoroughly qualified from practicing the medical profession. But in this country, where all men have an equal voice in State, county, and municipal management, these things are much more difficult of attainment. The mass of the people study the political situation, and some of the mercantile class interest themselves in statistics which exhibit the commercial and financial condition; but when it comes to matters of public health, many good citizens find it difficult to distinguish between measures calculated for the benefit of the community and the money-making jobs of political speculators; and with a general acquiescence in the necessity of stringent laws for the suppression of counterfeiting the circulating medium, a large proportion of the people are yet unable to comprehend the necessity or reasonableness of suppressing that most dangerous imitation—the counterfeit physician. But in all human affairs are intermixed the true and the false, the real and unreal, that which is and that which seems to be, and men are sometimes deceived into receiving shining brass for true gold when not in possession of anything to test it with; and it is therefore in accordance with the natural order of things that the average citizen should sometimes be deceived by external appearances, always gotten up for effect, in regard to matters of which he has no knowledge or test to apply. In fact, so little perhaps does he know of the wonderful complex structure which constitutes his own personality, or of the intricate processes by which life is sustained, that he can have no conception of the variety of diseases to which the delicate organism may be subject, or of the care and skill required in their treatment, nor of the amount of study and preparation, and the opportunities necessary to qualify the practitioner, and is therefore equally unable to understand the value of authorized credentials or the necessity of legal protection.

Digitized by Google

But it is unnecessary for me to dwell upon a class of defects and evils so well understood by the profession, and I now propose the remedy. Education has been frequently advocated as a great cure-all for many human evils, and especially for defects existing under free institutions; and in sooth, I know of no remedy which promises so much as a universal panacea, as correct, appropriate, and well directed education. But, although all branches of education taught in the schools may be useful, either for the knowledge acquired or for discipline of the mind, yet there is a tendency at present, as there always has been, to study those branches which are considered ornamental and fashionable to the neglect of other branches which would be much more beneficial, and especially where time and means are limited it would be best, as a rule, to learn those things which are most useful first. A good knowledge of the classics may not teach a man the full advantages of temperance and continence, neither will the ability to compute the distances or trace the movements of the stars, enable him to understand the proper uses of the organs of his own system or the requirements of the body; nor will the greatest accomplishment in the terpsichorean art, or the most accurate knowledge of drawing or music, teach the young lady the reason why the smallest possible waist should not be considered the most admirable.

I have always found that those gentlemen who have been regularly educated as physicians, but who from some cause have not practiced their profession, and all others who have studied at regular medical institutions long enough to obtain the groundwork of medical science, are friends and supporters of the regular physician; and if that class of men were more numerous, there would be no difficulty in procuring the enactment of wholesome sanitary laws, and the suppression of quackery.

The number of physicians engaged in curing disease and in repairing the accidents to life must always be limited; but the number of hygienists might, with great advantage to the people, be practically unlimited. Dunglinson defines

Digitized by Google

hygiene as "that part of medicine whose object is the preservation of health; it embraces a knowledge of healthy man, as well as the objects used and employed by him, with their influence on his constitution and organs." But, in order to obtain a knowledge of healthy man, it is indispensable by dissection to learn the structure and relations of the various organs, which, combined and joined together, form the body; and in order to understand what is required for the proper sustenance of the body, and the influence of the different articles used upon the constitution and organs, it is necessary to learn the elements which enter into the composition of the body, and to study the functions of the various organs.

And to acquire a knowledge of these branches, special opportunities are required. As to such special opportunities: In the first place, I would suggest that medical colleges might enlarge their facilities for dissecting, to accommodate a class of students who should attend for the purpose of learning all that is necessary to the full understanding of the hygienic branch of medicine only. And literary colleges might add to their curriculum each a professorship of hygiene, the chair of which should be occupied by a competent graduate of medicine. And private schools should be authorized, under the control of able and responsible teachers, where thorough instruction in all that constitutes preventive medicine might be given; and then the graded schools should be furnished each with a teacher fully qualified to give instruction in this useful branch.

And I submit, that these steps being taken, whereby the people would be more fully brought into partnership with the medical profession in disseminating this branch of knowledge which so intimately and deeply concerns themselves, would contribute eventually more than any other measure which could be adopted, towards evolving wise and efficient sanitary regulations, the suppression of the peculiar American evil and imposture of quackery, and the better development, improved healthfulness, and increased longevity of the human family.

Digitized by Google

PIGMENT INDURATION OF THE LUNGS,

ASSOCIATED WITH HEART DISEASE.

BY HENRY WORTHINGTON, M. D.

It is an accepted notion that science aspires to precision and exactness. It is also incontestible that medicine is advancing pretty surely into this magic circle of exactitude, and this advance is in part due to the study of lesions or pathology, and to the study of symptoms or semeiology—two departments most accessible to the general observer. Although it is certainly a fact that a knowledge of lesions does not always enable us to cure them; while it is again claimed, with show of reason, that etiology and therapeutics should go hand in hand; yet modern medicine owes an inestimable debt to the pathologist and the semeiologist, overshadowing possibly the laborious and elaborate investigations of the latter-day etiologist and therapeutist. Because any newly discovered morbid condition has lain unrecognized in times past, it is no evidence that an abnormality had not existed. Pathology, in fine, has unvailed so many of the mysteries of disease, that, like the laws of variation in nature, each new discovery reveals facts hitherto hidden away and apparently beyond recognition.

With these generalizations, I may state that the following observations are intended as a contribution to the study of a lesion which was first demonstrated by Virchow, and which he termed "Pigment Induration of the Lungs." His account is as follows:

"There is a process, which, in spite of its frequency and characteristic appearance, has attracted but little attention. * * * * When the thorax is opened the lungs appear

Digitized by Google

prominent, do not collapse, are compact, heavy, inelastic, and have frequently a peculiar yellow, brown, or reddish-brown color. * * * The tissue is dense, and at many points are red spots, * * * also other spots of a brown, rusty, or black color. Microscopical examination shows only the normal tissue, with extravasated blood in different stages of transformation into pigment. In the neighborhood of the points of extravasation the epithelial cells of the alveoli are stained yellow, and it is easy to see that these cells are identical and continuous with the colorless epithelium. * * * In addition, extravasations of blood take place in the interstices of the tissue, and these become changed into pigment. This lesion of the lungs is produced by chronic hyperæmia."

Although Skoda, Louis, Andral, Stokes, Walshe, and others, have referred to this condition, in general, the literature of the subject is meager, and with some reason, inasmuch as the affection, proved by numerous post-mortems as not rare, is extremely difficult to diagnose. Indeed, what are many times recorded as tuberculous consolidations and chronic pneumonic hepatizations, are well defined cases of pigment indurations; for the cases are too numerous, and too well attested by hospital autopsical tables, to doubt that the mistake is a common one. Furthermore, Delafield's admirable statistics show how, even when there is a suspicion of the existence of the affection, a diagnosis is never positive. So that it may be said, any evidence rests upon a very slender basis. I have more faith in our diagnostic art, however.

It is true that any symptoms which indicate obstruction to the passage of the blood from the lungs into the left auricle, point to this disease. Dyspnœa, cough with muco-sanguinolent expectoration, with the existence of emphysema, may be included as evidences of pigment induration; further confirmed by lessening of resonance over both lungs, enfeebled respiratory murmurs, and by the presence of subcrepitant râles; still made more certain by the association of mitral stenosis, or some cardiac disease; for

Digitized by Google

modern pathology teaches that a chronic hyperæmia, such as may be produced by heart disease, does give rise to organic changes in the pulmonary structure. This change consists in a dilatation of the capillaries, hypertrophy of the alveoli and pigmentation. This discoloration is easily seen by the naked eye, but the appearances under the microscope are, of course, still more characteristic. The different colors are probably only modifications of the same substance.

Rindfleish states that "the parenchyma gradually collapses more and more, the alveolar walls come into apposition with each other, stick together, and form a dense, hard, black mass, traversed by few blood-vessels; * * * the alveolar septa can still be recognized in thin sections in spite of their close apposition; * * * there is no reason to think that any inflammation precedes this condition."

Trousseau gives us a graphic description: "* * * We generally find small portions of lungs which are centers of congestion, as hard as pneumonic nuclei in their second stage, and as dark in color as the spleen. * * * In hæmoptoic engorgement, the indurated part presents a perfectly homogeneous color, almost black, or very deep brown-red, which renders it impossible to recognize in the pulmonary texture more than the bronchial tubes, and the largest blood-vessels, the tunics of which have lost their white appearance from being soaked in and stained with blood."

Walshe mentions the existence of a condition consisting of cough, watery expectoration, pulmonary apoplexy, dyspnœa and orthopnœa, as the result of mitral stenosis. Stokes says that disease of the mitral valve gives rise to cough, dyspnœa, sanguinolent expectoration, and pulmonary œdema. Neimeyer hardly notices the affection, and Flint, Wood, Watson, Da Costa, Loomis, and Aitken are silent. Balfour's cases of old heart disease confirm also the recorded results of other observers. And Delafield has written by far the best account of this condition, and shows in twenty

Digitized by Google

post-mortems that pigment induration is not by any means to be called a rare disease.

My observations, based on a study of eight autopsies, tend to confirm me in the opinion that it is not exceptional among a given number of patients, that in the Grecian sense would be called phthisical. The excitement of mining seemed to have been the exciting cause of this affection in six of the eight cases; yet rheumatism had occurred in five cases, in three of which there were pericardial changes, and in all endocarditic processes. All suffered from dyspnœa, all had pain; seven had bloody and one watery expectoration. The affection was suspected in five cases, and confirmed at the autopsy; of the remainder, one died in a relapse of fever, another presented all the evidence of Bright's disease, and the third was set down to chronic pneumonia.

A diagnosis was based on the following points more particularly: History of heart disease antedating any pulmonary symptoms; the existence of either mitral stenosis, or disease obstructing the passage of blood from the lungs into the left auricle; dyspnœa; cough with sero-sanguinolent sputa; pain or distress about the cardiac region; physical examination eliciting general loss of resonance; weakened respiratory murmurs, sometimes a sort of bronchial breathing, or a "blowing sound;" subcrepitant, infrequently very fine, râles disseminated through the lungs.

Of course, our diagnostic difficulties are great even with so characteristic a group of symptoms as these; indeed, we might almost repeat, with Bouillaud, that the nature of the disease has to be divined rather than diagnosed. The appearance of the lungs, when cut into, agreed in almost every particular with the descriptions given by Delafield. The pigmentation was usually easily seen with the naked eye. In two cases there was œdematous infiltration, and in one of these posteriorly there were numerous hemorrhagic infarctions. In one case there was calcareous degeneration of right lung. In two cases there were irregular patches of red hepatization, but quite different from the granular

Digitized by Google

appearance of croupous pneumonia. Pleuritic and pericarditic adhesions were noted; in the former seven cases, in the latter three cases, with more or less effusion in each. The liver was diseased in seven cases; the spleen in six; the kidneys in six; and the brain in one case. The heart was enlarged in six cases; in two it was small and pale. The left auricle was found dilated in five cases; the right in three; and the ventricles in one case. There was mitral disease in six cases. Of these, in one case there was enormous dilatation of left auricle and hypertrophy of the left ventricle, and insufficiency of the mitral valve; in another, atheromatous and fibrinous deposits along the walls of the left auriculo-ventricular opening, and dilatation of left auricle; in a third, hypertrophied left ventricle and dilated auricle, the valve being covered with vegetations; in a fourth, the leaves of the valve and the chordæ tendineæ were thick and rigid, the aortic opening was contracted into a button-hole slit, the left auricle was dilated, and the left ventricle greatly hypertrophied; in a fifth case, the valve was lined with a layer of atheroma, the anterior flaps of the tricuspid valve were hypertrophied and stiff, and the left auricle was dilated; and in the sixth case, there was stenosis, and atheromatous deposits in left ventricle. In the remaining two cases, in one there was aortic stenosis; and in the other, calcareous degeneration and aneurism of the arch of the aorta.

In reviewing the cases, the brief histories are transcribed almost verbatim from my note-book:

CASE ONE.—Jno. Bieman, German, æt 66. Patient was admitted into hospital suffering from intense dyspnœa and orthopnœa; vomited frequently, coughed constantly, expectorating a muco-sanguinolent matter, and he complained of pain in the cardiac region. An examination elicited the fact that there was a mitral systolic murmur and a harsh bruit heard loudest over the situation of the aorta. Prof. John T. Metcalf, who was in Los Angeles, saw the case and diagnosed it as one of aneurism of the aortic arch, which

Digitized by Google

was confirmed at the autopsy. The respiratory murmur was feeble throughout; anteriorly on right side there were subcrepitant râles and loss of resonance, and posteriorly (sub-scapular) there was entire absence of sound and complete dullness on percussion. Patient had been ill for a few months only; had never had rheumatism, and with the exception of a fever contracted while in the mines, had enjoyed good health previously. He had always used tobacco to excess, but drank beer moderately. He had been on this coast since '57, and always worked in a mine. His family history was good. He died six days after admission into the hospital, suddenly, whilst rising in bed.

CASE TWO.—Mike Reynolds, lab., æt. 65. History of renal disease. His breathing is labored; coughs much, the sputa being watery and bloody; has no appetite and is anæmic. Physic. exam.—Comparative dullness on both sides, loose, coarse râles throughout; respiratory sounds indistinct. The urine is albuminous, and there is œdema of the feet. A soft regurgitant murmur is heard over the situation of the left auriculo-ventricular orifice. After lingering on for several weeks, patient died suddenly whilst at stool.

CASE THREE.—R. Reamyl, miner, æt. 59. Began to have pain in cardiac region six months ago. Then followed a cough and shortness of breath, with bloody expectoration. On admission, he was anæmic, breathed asthmatically, and vomited constantly. Physic. exam.—Feeble respiratory murmurs, subcrepitant râles, and friction sounds; the percussion note is dull. The apex of the heart is pushed downwards and to the left about an inch, and there is an unmistakable regurgitant murmur at mitral orifice. The diagnosis of mitral disease was confirmed two weeks afterwards.

CASE FOUR.—D. Gardoni, miner, æt. 33. The patient had run through a course of typho-malarial fever, and on

Digitized by Google

the fifth day of a relapse, he died suddenly. Previous to the fever he had had two attacks of rheumatism, and since then he complained of pain in the heart, dyspnœa, cough with bloody sputa, and sharp stitches of pain posteriorly. A diagnosis of tricuspid disease was rendered more than probable by there being a murmur at the lower end of the sternum, violent pulsations, undulatory, synchronous with the arterial pulse, and producing a characteristic turgescence of the neck. If this was caused by a reflux of the blood which the right auricle refused to pump into the ventricle, then it was an example of Lancisci's "venous pulse."

CASE FIVE.—Jno. Donnelly, miner, æt. 37. Been complaining of palpitation, breathlessness, and cardiac pain for about eighteen months. Latterly he has coughed some and spat up considerable blood. He now suffers from great weakness, and has much distress when lying down. There is ædema of the extremities, and at times he is delirious. He states that his father and mother died of heart disease. A loud sawing murmur is heard over the mitral orifice, presystolic in character, and the impulse is felt more than an inch below the normal line. Râles, dry and moist, are heard before and behind, and there is loss of resonance on both sides. The death was sudden.

CASE SIX.—Thos. Melvin, miner, æt. 55. Patient states that he had a short attack of rheumatism two years ago, in Nevada, since which time he has never been entirely free from distress about the heart. Three months ago he began to cough, while in San Francisco, and had a sharp hæmoptysis. Dr. Toland advised him to go to Southern California, and so he sought admittance into the hospital here. There were feeble respiratory sounds on both sides, pleural friction murmurs, subcrepitation, and loss of resonance. The sputa were muco-sanguinolent. The *fremissement cataire* was distinct, and on applying the stethoscope, a soft bellows-murmur was heard over the left auriculo-ventricular orifice.

Digitized by Google

The pulse was irregular and small. The man died six weeks after admission.

CASE SEVEN.—C. Rudolph, miner, æt. 49. Has always suffered more or less from palpitation and irritability about the heart. Father, mother, and two brothers died of heart disease, so that, according to Mauriac, he probably has the "cardiac diathesis." He was in the hospital several months before death, and there was a progressive increase of the cough, with puro-sanguinolent expectoration, embarrassed respiration, and constant lancinating pain in the chest and heart. The pulse was exquisitely rapid and bounding, exhibiting all the characters of the *pouls de Corrigan.* With the second sound, at the base, a distinct musical murmur was heard. The action of the heart was violent; there was œdema of the feet.

CASE EIGHT.—Joseph Frey, painter, æt. 52. Served in Mexican war, and has led a hard life since. Says the doctors pronounced him incurable several years ago. Still he continued to work and drink as usual, until a pneumo-hemorrhage frightened him into the hospital. An examination elicited evidence of consolidation of the right apex, œdema of the middle and inferior lobes, and in the left lung emphysema. There was a soft bellows-murmur over the mitral orifice, and a *bruit de souffle* and intensified pulmonic second sound at the base. An indistinct double sound (reduplicated murmur of Duroziz) was detected over the carotid. The man died quietly one day whilst cleaning his copper medal.

Below is given a tabled resume of the foregoing observations:

Digitized by Google

PIGMENT INDURATION OF THE LUNGS.

No.	Age.	History.	Heart.	Lungs.	Liver.	Spleen.	Kidneys.	Brain.
1	66	Jno. Bieman, German, Miner. Intense dyspnœa, anæmia, persistent vomiting, cough, cardiac pain, murmurish confusion at mitral valve, aneurismal bruit over aorta, isochronously pulsating with the heart, absence of respiratory sounds over lungs, both sides.	Pericardium thickened and filled with serous fluid, heart pale and flaccid, auricles dilated, calcareous masses about the mitral flaps, aneurismal dilatation of arch of aorta, complete calcification of the thyroid gland.	Old pleuritic adhesions, pigment induration left lung, right lung bound to chest-wall and broken down into a cheesy and calcareous mass.	Enlarged intralobular, veins dilated. very pale.	Infarctions.	Small and pale.	....
2	65	Mike Reynolds, Laborer. Has had kidney disease 2 yrs; cough, watery expectoration, ædema and albuminous urine; loose râles and dyspnœa, murmur at mitral orifice, insufficiency aortic valve, and dilatation of left auricle. Death sudden.	Hypertrophy, aortic valves thickened and incompetent, mitral valve insufficient and left auricle enormously dilated, pericardium adherent, weight, 16½ oz.	Pigment induration of left lung, right lung ædematous, hydrothorax, pleuritic adhesions.	Enlarged and hard, pale.	Enlarged and congested.	Chronic parenchymatous nephritis, cortex pale and prominent, weight, 14½ oz.	....
3	59	R. Reamyl, German, Miner. Cough, bloody sputa, dyspnœa, râles, loss of resonance, double regurgitant murmur at mitral valve; apex displaced one inch.	Pericardium thickened and filled with sero-purulent fluid, heart hypertrophied, stenosis of left auriculo-ventricular orifice; weight, 31 oz.	Pigment induration, pleuro-pneumonia, pleuritic adhesions.	Small and pale.	Normal.	Pale and contracted	....

Digitized by Google

4	33	D. GARDONI, Italy, Miner. Died on the fifth day of a relapse of typho-malarial fever. Previous to fever there was cough and bloody sputa, dullness posteriorly, râles; at the tricuspid valve a distinct murmur.	Small and pale, right auricle dilated, hypertrophy of anterior flaps of tricuspid valve, fibrinous deposits in the meshes of the columnæ carneæ of left ventricle.	Pigment induration of the right lung, pleuritic adhesions, irregular red hepatizations.	Enlarged slightly.	Hyperæmic and softened.	Congested and enlarged.	Extravasations, small and flat in the pia mater, not involving the brain tissue.
5	37	JNO. DONNELLY, Ireland, Miner. Palpitation, dyspnœa, pain, orthopnœa, delirium, œdema, presystolic mitral murmur, râles in both lungs, dullness and hæmoptysis.	Hypertrophy, incompetence of mitral valve, left auricle enormously dilated, hypertrophy of left ventricle; weight, 16½ oz.	Pigment induration, stain very distinct, œdema left apex, calcareous vomicæ posteriorly.	Congested and enlarged.	Enlarged.	Normal.	....
6	55	THOS. MELVIN, Ireland, Miner. Ill two years with pain in the heart, breathlessness, cough with bloody sputa, râles and dullness, murmur at mitral valve, frémissement cataire.	Mitral stenosis, atheromatous deposits in left ventricle, dilatation of left auricle.	Pigment induration of right lung, pleuritic adhesions.	Small and pale.	Normal.	Normal.	....
7	49	CONSTANTINE RUDOLPH, Swede, Miner. Dyspnœa, cough, râles, pain, aortic regurgitation, pouls de Corrigan. "Cardiac diathesis."	Hypertrophy, dilatation of right auricle, contraction at the aortic orifice; weight, 17 oz.	Ædema upper lobes, both sides, pleuritic adhesion posteriorly, pigment induration.	Intralobular veins dilated.	Congested and hard.	Small, pale, contracted.	....
8	52	JOSEPH FREY, German, Painter. Old heart disease; cough, pneumo-hæmorrhages, dyspnœa, soft murmur at mitral valve and bruit de souffle at base. "Reduplicated murmur of Duroziz."	Button-hole contraction at aortic orifice, atheromatous deposit along the mitral segments, hypertrophy of left ventricle, dilatation of left auricle.	Pigment induration, ædema, emphysematous left lung, old pleuritic adhesions.	Cirrhosis.	Large.	Chronic parenchymatous nephritis, atrophied.	....

Digitized by Google

TREATMENT OF CHRONIC CORPOREAL ENDOMETRITIS.

BY STILLMAN HOLMES, M. D., OF SANTA CRUZ.

A great diversity of opinion has always existed among our leading gynæcologists in regard to the treatment of this disease. I will not occupy the time of the society by giving minute details of treatment, nor by discussing the various complications which frequently co-exist with this affection, as they have all been so ably and thoroughly discussed in our various works on uterine diseases. I simply propose to briefly consider the merits of the several forms of intra-uterine medication in most general use.

The use of medicated intra-uterine injections in the treatment of this disease has been advocated by some high authorities, among them by Velpeau, Matthews Duncan, Tilt, and others; but, at the present day, the predominance of authority is decidedly against them. They are opposed by Atthill, Playfair, H. Bennet, Gosselin, Depaul, the late Dr. Simpson, and many others. Dr. Thomas, in his remarks on the subject, gives pretty conclusive evidence that, even in the most skillful hands, they are not entirely free from danger. A considerable number of fatal cases of peritonitis have resulted from their use, and in numerous other cases they have caused very alarming symptoms.

Alterative applications can be applied to the interior of the uterus with equal efficiency, and with perfect safety, in the manner described by Dr. Thomas, which consists in passing a small cervical speculum through the cervical canal, and then saturating a swab, made by wrapping a probe with cotton, with the medicated fluid, and passing it into the uterine cavity. This is the form of intra-uterine medication which Dr. Thomas has found most efficacious,

Digitized by Google

although, from the very unfavorable prognosis which he gives in cases of long standing, it would seem that this mode of treatment has not proved very successful.

Scanzoni, who recommends, in obstinate cases, either medicated injections or the use of the porte-caustique armed with the nitrate of silver (giving the preference to the latter), gives a still more discouraging prognosis. He remarks: "As for ourselves, we do not remember a single case where we have been able to cure an abundant uterine leucorrhœa of several years standing." (Scanzoni, Diseases of Females, 4th Am. ed., p. 202.)

The use of strong caustic applications in this disease is objected to by some of our highest authorities, Dr. Thomas, among others, although he approves of their use in obstinate cases of cervical endometritis, and in fungous degeneration of the mucous membrane of the body of the uterus. In this latter affection he however prefers the curette.

On the other hand, this class of applications is highly approved by Dr. Atthill, Dr. Playfair, M. Courty, the late Dr. Miller of Louisville, the late Dr. Churchill, and others.

M. Courty, in his work on Diseases of Women, advocates the use of the solid nitrate of silver. He introduces a small piece of the solid stick into the uterine cavity, and leaves it there to dissolve. He states that this treatment has always proved successful in his hands.

Professor R. Beverly Cole, of San Francisco, informs me that he has taught and practiced this treatment for fifteen years, and that he has derived none but beneficial results from its use.

Dr. Playfair prefers the carbolic acid, combined with an equal quantity of glycerine, and states that in his experience in no case have any ill effects followed its use, and that he has never had a case which has resisted its action. He remarks that he has not tried the nitric acid. (Braithwaite's Retrospect, Part 67, pp. 223, 224, from the Lancet.)

Dr. Miller states that in a very large experience, extending over a period of seventeen years, he has followed the practice of cauterizing the cavity of the uterus with the acid

Digitized by Google

nitrate of mercury and other strong caustics, "without any more pain than attends cauterization of the cervix, and without any evil consequences whatever." (Quoted by Playfair, Op. cit., p. 221.)

Dr. Atthill gives a decided preference to the nitric acid, in severe and obstinate cases, and in cases accompanied with hemorrhage. He describes its action in the following language: "Its application causes very little, indeed in general, no pain. It produces but a superficial slough, and has often a wonderful effect in bringing about a healthy condition of mucous membrane lining the body and cervix uteri. It also, in many instances, exerts a directly sedative influence, allaying the severe pain and vesical irritation so constantly present in cases of endometritis." He reports very satisfactory results from its use, and states that in no case has it produced any unpleasant effects. (Braithwaite, Part 67, pp. 178, 181; and Part 69, pp. 240, 242.)

From what we know of the pathology of the disease under consideration, as stated by Thomas, Scanzoni, and others, and from the general results of the experience of the profession, it seems evident that in all severe and obstinate cases, and, in fact, in all cases of long standing, of chronic corporeal as well as cervical endometritis, it is necessary to commence the treatment by the application of some strong caustic to the uterine mucous membrane, in order to establish the healing process, and bring about a healthy condition of the membrane. I have accordingly, for several years, commenced the treatment of all such cases by the use of some application of this class. For various reasons, I have given the preference to the nitric acid. The acid nitrate of mercury possesses no advantage over the nitric acid, and, in some cases, has produced salivation. The solid nitrate of silver, left in the uterus to dissolve, seems an inconvenient application, and, according to Dr. Atthill, its action is not so effectual nor so free from pain as the nitric acid. The use of the nitrate of silver by the porte-caustique, as practiced by Scanzoni and others, seems not in general to have accomplished the desired effect. The carbolic acid, according to

Digitized by Google

the experience of Dr. Atthill and others, is not as efficient as the nitric acid.

I have had considerable experience in its use for several years, and in no case has it produced any unpleasant or injurious effects. I frequently meet with cases that prove very slow of progress, and that require treatment for many months, especially those cases complicated with much hypertrophy, the "areolar hyperplasia" so clearly described by Dr. Thomas; but I have met with no case that did not gradually improve under treatment, or in which the patient was not satisfied with the result. Unless some incurable complication exists, I believe we can always expect, if not a perfect cure, at least very great amelioration of the symptoms.

The success of the treatment will, of course, depend on its being properly carried out. It must be admitted that this disease is not easy to cure, and that much familiarity with uterine diseases, and the most careful attention to all the details of treatment, both general and local, are indispensable requisities to success. Before applying the caustic, any existing tenderness or congestion of the body or cervix of the uterus must be relieved as far as possible by rest, local depletion, warm water injections, emollient applications, etc., and any existing displacement must be corrected as far as practicable; although I have generally found, as stated by Dr. Bennet and Dr. Playfair, that these displacements tend to gradually disappear as the uterus assumes a more healthy condition. The uterus must be relieved from pressure by the use of the skirt-supporter, and in many cases the use of the abdominal bandage is very beneficial. The cervical canal is almost invariably very open and patulous in this disease; but, should it not be sufficiently so, it must be dilated by tents of sponge or sea-tangle, not neglecting to observe the extreme caution in the use of these tents which is enjoined by Dr. Thomas.

In making intra-uterine applications, I prefer the ordi-

Digitized by Google

nary Ferguson's glass speculum, for the reasons stated by Dr. Playfair, that it excels all others in illuminating power, and by fixing the cervix in the extremity of the speculum, it presents mobility of the uterus. If this speculum be used, it is necessary to be provided with a number of them of various lengths and sizes, and to select one as *short* as the case will admit, as recommended by Dr. Thomas. I have also found it a great advantage to use as *large* a speculum as can be conveniently introduced.

Should the mucous membrane of the cervical canal be in a healthy condition, it must be protected from contact with the acid by the introduction of the cervical canula. The application of the acid is materially facilitated by drawing down the os uteri with the vulsellum, especially in cases accompanied with flexion. I usually find a *light* application of the acid sufficient. I have had no experience with its free application, and should suppose that it would very rarely, if ever, be required. Having prepared a number of swabs, by wrapping delicate probes of whalebone or other flexible material with a thin layer of cotton, and having thoroughly cleansed the internal surface of the uterus, I dip one of the swabs in the acid, and *carefully remove all superfluous acid* from the swab. I then pass it up to the fundus, and move it gently over the surface. Perfect rest must be enjoined after applying the caustic. I frequently find a single application of the acid sufficient. After destroying the granulations or fungous growths, which usually exist in these cases, any farther cauterization would, of course, interfere with the healing process, and it is therefore very important to avoid too frequent cauterizations. I usually follow this treatment by the application, at intervals of five or six days, of the tincture of iodine, and should the patient not continue to improve after several weeks, I repeat the application of the acid. In several cases accompanied with obstinate hemorrhage, I have by a single application of the acid, permanently arrested the hemorrhage. For several days before and after the menstrual period, all applications

Digitized by Google

should be omitted, and the patient should be directed to take more than the usual amount of rest during menstruation.

In cases complicated with inflammation of the os uteri or cervical canal, or with hypertrophy of the cervix, I find frequent irrigations with warm water very beneficial. I have also derived great assistance in these cases from the use of sponges medicated with a weak solution of iodine, tannic acid, or other medicinal substances. Glycerine is also a valuable addition in many cases. The iodine has the advantage of being one of the best disinfectants as well as alteratives. These medicated sponges are introduced through the cylindrical speculum, up to the os uteri, and allowed to remain for twenty-four hours. The patient can herself be taught to introduce them if desirable. I also find sponges of a larger size, medicated according to the requirements of the case, very useful in cases accompanied with displacement, by acting as a support to the uterus. In many of these cases pessaries of solid material cannot be borne without great discomfort.

Tonics, laxatives, and other medicines must be given when required, and throughout the whole course of treatment the general regimen of the patient must be strictly attended to. The diet should be carefully regulated, and as much out-door exercise directed as the patient can bear without producing fatigue or aggravation of the local symptoms. Baths of some kind are generally beneficial, and sea-bathing is in many cases of great service. The regulation of the genital functions is also important. In some cases total abstinence from sexual indulgence will be required, and in others great infrequency and caution.

The mental depression which so often exists in this disease is a very great hindrance to the cure, and should be counteracted as far as possible by the influence of cheerful and congenial society, and whatever other agreeable mental influences can be commanded. One of the most effectual hygienic remedies is a total change of climate, scenery, and association. A sojourn at the seaside has generally proved

Digitized by Google

exceedingly beneficial, especially to those patients residing in the interior or in large cities. I know of no place that offers greater advantages as regards climate, scenery, sea-bathing, agreeable society, etc., than Santa Cruz, and patients affected with uterine disease, have, in all cases that have come under my observation, been benefited by a sojourn here.

I will give a brief statement of a single case, not as presenting any extraordinary features, but simply by way of illustration:

On October 29, 1877, I was consulted by Mrs. ——, a lady from a distant Territory, aged 32. She had been married thirteen years, and had borne two children, the oldest being seven years of age. She had always enjoyed good health, with the exception of excessive nausea and vomiting during her pregnancies, until June, 1874. At that time she again became pregnant, and the nausea and vomiting became so obstinate and uncontrollable, and she was becoming so much reduced in strength, that, at the fourth month of pregnancy, her attending physicians decided to produce abortion. This was effected, but was attended with excessive hemorrhage, which reduced her to a condition of extreme debility. Soon after she became affected with pain in the back and loins, followed by leucorrhœa and menstrual disorder. Her nervous system became seriously affected, and she had occasional attacks of hysterical coma.

In February, 1865, four months after her confinement, she went to Buffalo and placed herself under the treatment of Dr. James P. White, the eminent gynæcologist of that place. I am not furnished with the doctor's statement of her condition at that time, excepting that he told her that she had a great deal of enlargement and inflammation of the neck of the womb. Under his treatment she steadily improved, and at the end of three months was much better in every respect. He informed her that she had still considerable enlargement and inflammation of the neck of the womb, and that she would require several months further

Digitized by Google

treatment, but as he was about leaving Buffalo for an absence of several weeks, she returned home. She continued to improve for some months longer, and, although not fully recovered from the leucorrhœa, pains, and nervous disorder, was able to pursue her ordinary avocations for nearly two years.

Owing to several months continued over-exertion, her former symptoms returned with increased severity, and when she came to me for treatment, she was affected with pains in the back, hypogastrium, and left ovarian region, copious leucorrhœa, anorexia, meteorism, and much nervous disorder. At the commencement of each menstrual period, the discharge was irregular and scanty, and was accompanied with such intense pain as to require the hypodermic injection of morphia, and the inhalation of chloroform to give relief. The dysmenorrhœa was also generally accompanied with paroxysms of hysterical coma. On examination I found the external os and cervical canal in a perfectly healthy condition. The internal os was relaxed and patulous, and there was considerable enlargement and tenderness of the uterine cavity. I found also some enlargement and tenderness of the body of the uterus, but no displacement of the uterus, excepting a slight prolapsus. The case was plainly one of corporeal endometritis. After several days of preparatory treatment, I made an application of strong nitric acid to the mucous membrane of the body of the uterus, in the manner described in the foregoing remarks. This caused no pain, either immediately or subsequently. I ordered perfect rest for several days, and prescribed tonics and such other remedies as the case seemed to require. At the expiration of a week, I made an application of the tincture of iodine in the same manner, and continued to make this application, excepting at or near the menstrual period, at intervals of five or six days, as long as any symptoms of the disease remained. At the next menstrual period after applying the acid, the pain was less severe, but the menstrual discharge was more copious, and was followed by a much more abundant leucorrhœal

Digitized by Google

discharge than had previously existed. This continued for several days, and then gradually diminished. From that time she improved rapidly. I should remark that soon after her arrival in Santa Cruz, she experienced a very invigorating effect from the change of climate. At the second menstrual period after commencing the treatment, she was entirely free from pain, and at the expiration of three months had entirely recovered; as she expressed it, she never felt so well in her life. She now writes (April 12) that she is in perfect health.

REMARKS.—This case presents several points of interest. It is evident that it was originally a case of areolar hyperplasia, and that this was consequent on subinvolution, following abortion, and was complicated with endometritis. The rapidity and completeness of the patient's recovery was no doubt owing to her vigorous constitution, and also to the fact that her cure had been a large part effected several years previously by Dr. White. The invigorating effect of the climate, and the other favorable hygienic influences of Santa Cruz, also, without doubt, contributed much to her recovery. This case is also an illustration of the fact stated by Dr. Bennet, that hypertrophy of the cervix uteri will frequently continue to subside after the cessation of all treatment, and, in many cases, will entirely disappear.

Digitized by Google

MUSHROOM POISONING.

BY J. A. DAWSON, M. D., OF CHICO.

MR. PRESIDENT AND GENTLEMEN: Poisoning from mushrooms is so exceedingly rare, and so little is said by authorities concerning the nature of the poison, treatment, etc., and the effect produced by the different species is so entirely dissimilar, that a report of a case which occurred in my practice within the past month may be of interest to some members of the profession.

I was called Monday morning, at eight o'clock, to see three persons who, on the previous evening, at seven o'clock, had partaken of a savory dish of what was supposed to be edible mushrooms, but which proved to be a species of that fungi of a very poisonous nature. Two of the patients were large, fleshy men, of intemperate habits, while the third was slenderly built, and inclined to be delicate. The symptoms of poisoning were alike in all, except were more violent in the person of delicate constitution, who partook more freely of the repast than the others. We will confine our report to the history of his case. No uneasiness was experienced by the patient until three o'clock the next morning, eight hours after the mushrooms had been eaten, when symptoms of poisoning were manifested by great pain in the stomach and bowels, accompanied by violent vomiting and purging, which was very persistent and baffled all attempts at relief. The matter ejected from the stomach was of a liquid character, dark green in color, and when the stomach was emptied of its contents, there was great temporary relief; but this abnormal secretion accumulated very rapidly—as much as a quart would collect in the stomach in half an hour after everything seemed to have been thrown up.

Digitized by Google

There was an intolerant thirst, the patient demanding water all the time, which was given very sparingly, not in sufficient quantity to account for the enormous amount thrown off from the stomach every few minutes. The evacuations from the bowels were thin and light in color, closely resembling the rice-colored stools so characteristic in cholera. Clonic contractions of the muscles of the legs and the abdominal muscles occurred at intervals. There was no opisthotonos, no drowsiness or inclination to sleep; pulse weak and frequent, from 130 to 140 beats per minute; tongue very red on the margins; skin hot and dry. These symptoms continued for three days without abatement, when the vomit assumed a black coffee-ground appearance, occasionally sanguinolent. The ejections from the bowels were of the same nature. There was now tenderness over the epigastrium, extending over the abdominal surface; patient unable to retain but little on the stomach, and complained of pain when anything was eaten. The countenance began to assume a haggard appearance; great emaciation and loss of strength; troublesome hiccough; and on Friday, the fifth day after the toadstools had been eaten, the patient expired.

The autopsy verified the opinions of myself and the physicians who saw the case with me, that the poison exercised only a local effect upon the stomach and intestines, just as any irritant poison would do, and that the muscular contractions were not caused by any impressions made upon the nerve centers through the medium of the blood, but attributable only to reflex action caused by the intense irritation throughout the intestinal canal. The stomach was entirely denuded of the mucous membrane, and the muscular coats partially destroyed. The blood vessels were very much injected, and almost completely isolated. The duodenum and intestines presented the same appearance, and were filled with grumous matter. All the other organs of the body were found in a healthy condition.

The treatment in these cases was similar to that used in gastro-intestinal inflammation. Diet consisted of milk and

Digitized by Google

lime water, which seemed to agree with the patients better than any other article of food. Demulcent drinks were ordered instead of water. Ice was given whenever desired. A saline purgative was administered in the beginning, to clear the bowels of any irritating substance that might remain in them; opium and sub-nitrate of bismuth to allay irritation and produce sleep, or hypodermic injections of morphine when stomach was too irritable to retain the powders. Blisters were applied over the epigastrium, and warm hop fomentations to the bowels. Nutritious and stimulating enemata were resorted to every three or four hours, which were principally relied upon to support the powers of life. When the pulse became very feeble, hypodermic injections of brandy were resorted to, four drachms at a time being given, which never failed to increase the volume and force of the heart's action; this was only done when the stomach could not retain stimulants. As the tendency in all of the cases was to asthenia, everything was done to sustain the vital powers.

Two out of the three patients recovered after a severe and protracted illness.

Digitized by Google

THREE CASES OF PARACENTESIS THORACIS.

BY W. S. THORNE, M. D., AND ROBT. CALDWELL, M. D.

CASE ONE.

Pyothorax treated by Aspiration and subsequent Free Drainage.

The patient, F. W., aged 25, native of Massachusetts, a man of medium height, slender, and of a light complexion, came under observation on January 10th, 1877. The left side of the chest was found distended, the intercostal spaces bulged out, absolute flatness on percussion, and no respiratory murmur whatever. The heart was to the right of the sternum, and the apicial beat two and one half inches below and to the left of the right nipple. He had considerable respiratory difficulty, and exaggerated respiration in the right lung. He complained of shortness of breath, especially on going up stairs; slight cough, without expectoration, and inability to sleep on the right side, having always to turn upon the left side before sleep could be procured. His appetite was good, and he was fairly well nourished, although some emaciation had evidently taken place. He had never suffered night sweats or rigors. Knows of no specific or hereditary taint in his family. Had always been strong and robust until the present sickness. Had been a pretty free liver, and had enjoyed himself as vigorous young men usually do. About eighteen months previously, while living in Boston, had contracted a cold which developed into a pleuritis, from which he was sick some time, and during convalescence his medical man sent him to the

Digitized by Google

Island of Nassau to spend the Winter. While residing on the island he improved rapidly in health, strength, and spirits, and at the termination of his residence considered himself a well man. On his return home, Mr. W—— called on his physician and requested him to examine his chest. The doctor remarked that he was looking so well that he did not think it necessary to make an examination, and so let him go. A short time afterwards he began to suffer from shortness of breath and slight cough, but sought no medical advice. His family, thinking that a change of climate would be more beneficial to him than a course of medicine, concluded to send him to California. On his arriving here Mr. W—— took up his residence on a farm near San Jose, where he lived on country fare and took regular exercise, until his difficult respiration and general weakness warned him to take advice in regard to his condition. It having been determined that the left pleural cavity was full of fluid, the chest was aspirated with a medium sized needle, between the eighth and ninth rib, near their angles, on the 29th of January. One hundred and sixty ounces of white sweet pus was evacuated. There was slight cough during the operation, which lasted one hour and a half. He stood the evacuation of such a large quantity of fluid well, although feeling quite faint afterwards. A dose of morphine was given and the patient left for the night.

January 30th—Pulse 84, cheerful and out of pain, tympanitic resonance over the entire left chest, appetite very good, quite a splashing of fluid can be heard on shaking, showing that all the pus had not been evacuated.

On the fourth day after the aspiration, Mr. W—— was in town all day, played a game of billiards, and was more comfortable than he had been for over one year. He sleeps well all night, can lie on either side, and his appetite has increased wonderfully.

On February 10th, an incision was made through the skin, between the seventh and eighth ribs, and a large trocar plunged into the chest. Thirty-two ounces of thick brown pus was drawn off. A counter opening was then

Digitized by Google

made between the eleventh and twelfth ribs at the back, on to the point of an iron staff projected against the intercostal space through the upper opening. An India-rubber drainage tube was now drawn through, and the two ends fastened together by means of a silk ligature. The wounds were dressed with sponges and cotton wool soaked in a five per cent. solution of carbolic acid.

For about one month after the operation he was very weak, the discharge was abundant, the appetite bad, the pulse ranged from 90 to 120, but the temperature never went higher than 102. The discharge never became fœtid, thanks to the free use of antiseptics and efficient drainage.

Iron and quinine were plentifully given, and also the strength kept up by frequent potations of milk punch. During the month of March he gradually grew stronger, his pulse became fuller, his appetite returned, and on the 21st of March he was enabled to go outside of the house. The rubber drainage tube was not removed until April 5th, when a short silver tube was introduced into the lower opening.

On the 6th day of May the discharge was only a little thick glairy pus, and the silver tube was removed. The patient had gained in weight, and had a vigorous appetite; the lung was expanded down to the sixth rib, and feeble respiration could be heard. The left chest has shrunken slightly. The heart has resumed its normal position. Up to the present writing he has been under observation, his health has remained excellent, and all the functions are carried on with vigor. A fistulous opening leads into a small cavity from which drains about a tablespoonful of glairy pus daily.

CASE TWO.

Hydropneumothorax, Pneumonic Phthisis, Paracentesis Thoracis.

In June, 1877, examined M. F——, aged 46. A year ago he had pneumonia, affecting the left side. His family record is good, but the patient has been irregular and dis-

Digitized by Google

sipated in his habits. His general health was restored in a measure after the attack of pneumonia, but there was always more or less cough. Six months since he had a copious hemorrhage, since which time he has had three slighter ones. The patient sits up very little, is weak, and has night-sweats. The respiratory sounds over the right lung are exaggerated, and broncho-vesicular percussion gives diminished pulmonary resonance at the apex. The heart is seen impinging against the chest-walls to the right of the sternum. On the left side the respiratory sound is amphoric, which sound extends as low down as the fifth rib. Below this point no respiratory sound is audible. Behind, in the supra and inter-scapular spaces, the sound is bronchial. Percussion elicits a high tympanitic note from the clavicle to the fifth rib, where it abruptly terminates in flatness. The latter sound follows a horizontal line when the patient is upright, and oblique when he is recumbent. Between the clavicle and fifth rib the tympanitic sound is intense and ringing, and the chest conveys a sense of elasticity to the touch. The voice is markedly amphoric over this region. The left chest is bulging and immobile as compared with the right. Pulse, 120, small; axillary temperature, 99 F.; respirations, 30.

Diagnosis.—Pneumohydrothorax and pneumonic phthisis. A few days subsequent to this examination, the patient was conveyed to town, a distance of twenty miles. Great prostration followed, with dry tongue, rapid pulse, picking of bed-clothes (carphologia), and muttering delirium. He remained four days in this condition, when he unexpectedly rallied, and in a few days was able to sit up a little. As soon as his strength permitted, the left chest was aspirated, and seventy-two (72) ounces of dark amber colored fluid was withdrawn. Amphoric voice and respiration was now more marked, and there was superadded to it a sharp metallic tinkling with each respiratory act. The upper and posterior part of the chest containing the compressed lung remained dull, and the respiratory sound bronchial in character. Patient much relieved by the operation, and can lie comfort-

Digitized by Google

ably on either side. The cough ceased with the withdrawal of the fluid. The month following the paracentesis, cough returned with abundant expectoration, and death occurred from exhaustion two months after the tapping. No autopsy was allowed.

CASE THREE.

Hydrothorax from Pleuritis—Aspiration.

F. M———, native of Mexico, age 27; was well until a month ago, when he took cold from exposure. He has had no pain, and very slight cough; thinks he has at times a little fever. He only feels ill from increasing weakness and shortness of breath. His pulse is 124; respirations, 24; and axillary temperature, 100½. The left chest is bulging, and the intercostal spaces obliterated. The respiration is bronchial between and above the scapula on the left side, and broncho-vesicular as low as the third rib, in front. The heart impinges against the chest to the right of the sternum. The vocal fremitus much greater on the right side, percussion gives flat sound from the clavicle to base of the lung. Four days after the first examination the left chest was aspirated, and one hundred and eleven (111) ounces, or nearly seven pints, withdrawn. No distress followed the removal of the liquid. The fluid was of a pinkish hue; specific gravity, 1020; on cooling, coagulated masses are seen floating through it. The day following the operation the pulse was 106; temperature, 99; respirations, 24; can lie on either side; has no cough; and feels better than he has for a long time. The respiratory sounds are now heard as low as the fourth rib.

Twenty-fourth day since the operation—The patient's condition has been uninterruptedly favorable.

REMARKS.

CASE ONE—Presents an example of what is improperly termed purulent pleuritis, the primary exudation being fibrino-serous, and its conversion into pus being a secondary result by the multiplication of leucocytes in some manner

Digitized by Google

not yet satisfactorily determined. The removal of so large a quantity of purulent fluid—twelve pints—at two operations, is believed a prudential measure worthy of imitation. The gradual removal of the pressure within the pleural cavity lessens the tendency to *hemorrhagia ex vacuo*, which usually takes place in cavities whence a large quantity of fluid has been suddenly withdrawn, and which hemorrhage is believed to ichorize the remaining fluid in cavities thus evacuated. The antiseptic dressings used during the treatment is believed to have been an important element in the final result. In purulent collections of the pleural cavities the gradual removal of the fluid by aspiration, followed by free incision and antiseptic protectives after all symptoms of the first operation shall have passed away, is thought to be a safe and rational mode of treatment in such cases.

CASE TWO—Presents an example of phthisis following pneumonia, attended by the somewhat rare complication of pneumohydrothorax, and the relief, and probable greater duration of life following the removal by aspiration of a large quantity of liquid effusion. Although no autopsy was obtained, the physical signs were thought to have been typical of the lesion, and to have confirmed the diagnosis.

CASE THREE—Presents an example of uncomplicated pleuritis, with large fibrino-serous effusion, and the immediate relief afforded the respiratory organs by its removal. It is a notable feature of this case, that there was an entire absence of pain, and a scarcely noticeable cough or fever; and that the symptoms of pleuritis were so obscure that an early diagnosis before the effusion became excessive, would hardly have been made without careful exploration of the chest, which is often omitted, as in case first. Indeed, it is confidently believed that there is no physical condition so constantly overlooked or wrongly diagnosed as *pleuritic effusions*, especially when the disease has been from the beginning chronic or subacute in character. The trophic and organic changes of the heart and lungs from the gradual encroachment of liquids within the pleura, are so disastrous

Digitized by Google

to the patient that no medical man can afford to omit the most rigid exploration in cases of supposed sub-acute pneumonia, engorgement of the liver or spleen with inability to lie on either side, and incipient phthisis suddenly developed in a previously healthy subject. Physical exploration of the chest often resolves these alleged disorders into simple pleuritic effusions, which, when timely relieved, prevent serious or permanent sequelæ.

It will be observed that in the three foregoing cases the disease occurred on the left side. The greater frequency of pleuritic inflammation of the left chest has been noted by Professors Fraentzel, Flint, and others, but the determining cause has not been thus far satisfactorily explained.

Digitized by Google

ON FETICIDE.

BY H. GIBBONS, SR., M. D.

Notwithstanding the earnest opposition of writers and lecturers and preachers and legislators, the practice of feticide appears to be on the increase. It is universally condemned. No one ventures openly to defend it. It is altogether repugnant to the moral sentiment of society. It awakens anxiety and apprehension for the future of the nation. It is becoming a constitutional disease, a *cachexia*, poisoning the blood and distilling its venom into every fiber of the body politic. In the contemplation of the subject, it has appeared to my mind to be much less an isolated vice than people are wont to suppose. There are certain practices and customs, certain opinions and modes of thought with which it is related, and which I propose to consider briefly in this essay.

Feticide is not a vice of ignorance. It prevails most among intelligent or half-taught people. It rather grows out of a certain kind of knowledge which has become popular in late years. In the estimation of our public guides, knowledge is the one thing needful in a State—the sum and substance of education. Knowledge is power, but power for evil as well as for good. If misdirected, it puts arms in the hands of the malefactor and makes him skillful in crime. There is more knowledge than ignorance in the parentage of feticide.

"Reform," is another watchword of mischief. What the great woman of France exclaimed on her way to the guillotine may well be said of *reform*: "Oh! what crimes are

Digitized by Google

perpetrated in thy name!" So much has the word been abused by schemers, and dreamers, and plotters, that it has almost become a stench in the nostrils. The cry of reform in religion, in morals, in politics, may well excite suspicion of selfish if not sinister purposes.

My hearers cannot have failed to observe the existence of a certain class of persons whose special mission is to diffuse a knowledge of everything belonging to the sexual organs, and to reform the marriage relation. The work is mostly done by lecturing, and the subject strikes a cord in the public mind by which a prurient crowd is attracted. Young ladies are taught to "know themselves," and are initiated into the mysteries of Lucina, and qualified to meet all the emergencies of life. Married women also become wise as "sage-femmes," and learn many arts that may be of service to them. Of course it is not the design to promote feticide. On the contrary, the practice must be condemned; but the pupils, nevertheless, acquire valuable knowledge on the subject.

In the days of our fathers, marriage and increase were left in charge of the affections. Men and women followed their natural impulse. They did not stop either before or after marriage to study the Malthusian arithmetic. Matches were made for life, for better or worse, and not on trial, as at present. The family increased without restraint and without anxiety. Parents were proud of their dozen children, like the Patriarch of the Hebrews—not ashamed of them, nor afraid of their starvation.

But the age of calculation has come. When men contemplate matrimony they take their slate and begin to cipher. After marriage they cipher again, in multiplication, we may say. The wife also calculates. The troubles and pains of gestation and nursing are taken into view. The temporary privation of social and fashionable enjoyment is considered. Friends are not wanting to inspire her with disgust of a large family. Children are a nuisance—at least until they are born, and it is only then that nature compels the mother's love. What a blessing that God has

Digitized by Google

made woman, in this respect, like the brute creation, and forced upon her the animal instinct of love of offspring! But for this, so prevalent is the hatred of family increase, that I verily believe child murder would be tenfold more common in our Christian land than it is in China.

My first recollection of any public movement under the name of "reform," directed to the marriage and family relation, dates back about fifty years, to the New Harmony settlement under the charge of Frances Wright and Robert Owen. In this socialistic community the marriage ceremonial was abolished, and parties married each other at will. It was only necessary to inform the "Council," and have the marriage entered on the minutes. The minutes were published regularly in the "New Harmony Gazette," the organ of the community. I well recollect reading in the minutes a record of the marriage of two individuals, one white the other a quadroon. The record ran thus: A. B. and C. D. "informed the Council that last night they began to live together"—this and nothing more. About the same time Frances Wright and Robert Dale Owen (son of Robert) engaged in a crusade against certain religious and social institutions, under the banner of "Free Enquiry." One of the publications circulated by them, written, I believe, by Owen, was entitled "Modern Physiology." It was founded on the Malthusian idea of the dangerous increase of population and the necessity of checking the increase, and it described minutely the several methods of preventing conception.

I scarcely know how to handle my subject without offending against esthetic laws; but I am reminded that the physician cannot always do justice to his patient if he is too much afraid of soiling his hands. The theme is of too great magnitude to warrant the glossing over of its strong points with doubtful language. My hearers will have no difficulty in perceiving the relation which such publications as that just referred to bear to feticide. Familiarity with preventives prepares the way for criminal abortion.

From the date referred to, onward to the present day,

Digitized by Google

through the long years of the half century, those who are old enough can trace the continuous stream of obscene feticidal literature through pamphlet and lecture, and more particularly in the newspaper press. But worse than all this is the secret stream which permeates society, flowing verbally in the family circle and among the unmarried, teaching how the wife may avoid becoming a mother, how lust may be gratified without penalty, how shame may be concealed by ante-natal murder.

That an inconsiderate and unrestricted increase of the family is often an evil, no one will deny. But it is nothing compared with the results of calculation and unnatural restraint. The Creator has planted in the human mother an instinctive love of offspring. What if that love be supplanted by hatred? What if the embryo, in the whole course of its development, be an object of aversion and loathing? Do you suppose the infant will possess a perfect and vigorous organization? Is there not, to say the least, an imminent risk of an impaired constitution, a feeble body or mind, a tendency to disease, suffering, and premature decay? I have no question that unwilling conception and detested gestation have many times marred the offspring, and that their sin against nature has been visited on the parents in the sickness and pain of body, feebleness of mind, or perversion of the moral sense of their children. Farther than this, it appears to me undeniable, that aversion to offspring, and the restraints imposed by it, if largely extant, must lower the national character physically, intellectually, and morally.

For many years, the average size of families in France has been growing smaller and smaller. The change has been effected through the same calculation and restraint to which I have referred as increasingly prevalent in our own country. At the same time there has been noticed a diminution of the average stature of the French people. Statesmen are disgusted and alarmed at the arrest of population, and the prospective deterioration of race. These facts ought not to be lost on the people of the United

Digitized by Google

States. Already it is demonstrated by statistics carefully collected, that in some sections, the increase of population depends on the foreign element, and that there is no increment from the native stock.

It is a universal law, that the poor increase faster than the middling and wealthier classes; in other words, that the increase is in inverse proportion to the means of support. The poor do not regard the burden of child-bearing. Gestation does not stand in the way of their pleasures, nor do they fret lest their children shall starve. Large families are often a source of profit to the laboring classes. I knew a little boy who was employed in a printing office, and whose parents resided near a cotton factory which engaged a large number of very young hands. The lad was one of eight children, and his employer, on learning this fact, remarked that so many children must be very profitable to the parents. They would be, was his significant reply, if they were all ten years old when they were born. And here is the difference between the rich and the poor. As the children of the poor grow up, they become sources of revenue to the parents, who find their interest in an unrestricted increase. Whereas, the children of the better classes—better because they have higher aspirations—are a source of increased expenditure. Hence one of the strongest inducements to feticide in married women, is wanting in the humblest walks of life.

And how does the future of the children of the rich compare with that of the children of the poor? Is there anything more uncertain—unless perhaps speculation in mining stocks—than success in life and business among those who set out with an inheritance of wealth? Take any given number of young men, say one hundred, who begin to-day the voyage of active life endowed with a competence, and the same number of the children of the poor, trained to toil, and with such schooling as all poor children in our republic can obtain, and trace their onward course to the middle climacteric, twenty-five or thirty years hence, and then call the roll. Shall we not find, think you,

Digitized by Google

that money has been a curse oftener than a blessing, and that poverty has furnished the stimulus which has inspired to triumphant effort? Read the biography of great men. Have not a large proportion become great in spite of adversity, and gathered from the seeds of difficulty a harvest of success?

Whatever deters from marriage tends to licentiousness, prostitution, and feticide. It is therefore better to promote marriages, even in the face of a lean budget and other considerations of policy—always presuming on the mutual affection of the parties. In royal families marriage is controlled by motives of state. There are few love matches among princes, and yet their marriage relations are not often unhappy. Providence has so organized the human character that when a marriage contract is formed even without affection, merely from motives of policy, it is impossible for the parties to cohabit without the development of a mutual attractiveness, if not of real love; *unless*, and here is an important condition, there be some inherent vice of organization, some infirmity of temper, in one or both, which would disqualify for all matrimonial alliance. Companionship is a natural want. The human heart, like a vine, is always throwing out its tendrils in quest of an object of attachment. I think it was Swift who expressed the sentiment that if he had no other object on which to place his affections, he would seek some vine or shrub, and cultivate and cherish it with all his heart.

Early marriages are not so apt to result from calculation and policy as those of riper years; but the latter end more frequently in divorce. The increasing frequency of divorces in our country is a source of much anxiety to the moralist. It is both a cause and an effect of vicious morals. When the divorce grows out of drunkenness, or licentiousness, or other flagrant vice of one of the parties, the case is clear; but incompatibility of temper, and some other alleged causes, should put both parties to shame. In some countries convicts are required to wear the letter T on their

Digitized by Google

backs. It might be well for divorced people to put the letter D to a similar use.

Phrenology also has offered its services in calculating the question of matrimony. With its calipers it measures the diameters and the nodules, and fits head to head in the holy alliance of hearts. There was a time in the rising glory of phrenology when its advocates fondly hoped that they had solved the great problem, and that the phrenologist would almost supersede the priest in matching the sexes—that he would at any rate precede in granting permits on the ground of fitness. But I have never known a marriage determined by cranial measurement, though I have known blockheads, male and female, whose fate in this regard was in the hands of the fortune-teller.

Then comes the pathological inspector, like an examiner for life insurance, who looks to the sanitary condition of the next generation, and refuses a marriage license to persons who may transmit disease, particularly pulmonary consumption. Whether persons of consumptive tendency should marry is a question of interest and importance; the parties, however, generally settle it for themselves. Marriage, among young people at least, is not commonly the result of deliberate selection. The first step is one of accident, and when a mutual attachment is once established, the question of health is ignored. Rarely has the prospect of disease and premature death broken the chain of love; on the contrary, it is more apt to awaken sympathy and rivet the links. How often do we see the betrothed rush with transport into each other's arms and seal the compact in the very presence of the angel of death! As spectators and friends we pity them, but they do not ask our pity, for they are but fulfilling the destiny of mortals, and finding in sorrow a deep and holy joy.

I have never been able to appreciate the sanitary law which would cut off from the privileges and enjoyments of married life all individuals of consumptive tendency. Consumption very often selects for its victims the brightest and best, the flower of the flock; females endowed with the

Digitized by Google

noblest qualities of the heart, and fitted to make the most affectionate wives, and the most devoted and exemplary mothers. And why should those whose hearts are the special depository of the affections, whom nature has made more than others capable of loving and being loved, why should they be arbitrarily excluded from that blessed union and companionship which may be essential to their happiness and to the perfection of their character?

The only answer is that the progeny is likely to inherit disease. But what if they do? Is it not a part of the general plan? Who knows but that society will derive moral benefit more than sufficient to compensate for the apparent physical evil? Death is never demoralizing. We pronounce it sad and sorrowful when youth is cut down in the early Spring. But the house of mourning is more congenial to virtue than the house of joy. Sorrow softens, and chastens, and refines the soul. The memory of the dear departed is a fountain of joy to the bereaved. To recall their fond image, to look back at their lives, to sit again with them in the family circle, to take to our arms their shadowy forms, to visit their graves and strew them with flowers—oh! there is virtue, there is happiness, there is religion, in communion with the dead.

Besides, the inheritance of disease from consumptive parents is by no means inevitable. A large proportion of children born of parents only one of whom has the pulmonary taint, escape the transmission. More particularly is this the case when the family is governed by sound hygienic laws. Nay, I have known more than one instance of complete and permanent immunity from pulmonary disease in the offspring of parents both of whose families were almost exterminated by disease of the lungs. On the other hand, how often do we see the disease developed where it cannot be traced to inheritance!

If the purpose of marriage were to develop the physical form and vigor of the race, or, in the plain language of the farmyard, to improve the breed as animals, then it would be well to single out certain classes of subjects and consign

Digitized by Google

them to celibacy. But bodily health and vigor is no guaranty of either intellectual or moral superiority. On the contrary, the virtues are more wont to dwell with corporeal frailty. Pulmonary consumption is not a disease of the inmates of San Quentin. Inducements and proclivities to crime are not associated with the tubercular diathesis. If sexual restrictions are to be imposed for the benefit of future generations, let the prohibition begin with the slaves of appetite and sensuality.

"But," I hear the whisper in the audience, "what has all this to do with the subject in hand?" I answer: Whatever tends to discourage marriage, and to remove it from the domain of the affections, and to make it the subject of calculation, tends in a greater or less degree to promote licentiousness, prostitution, and feticide.

Our age and our country, alive with free and busy thought, have given birth to a number of anomalies, if not monstrosities, religious, intellectual, and moral. Among these, not the least remarkable is the peculiar code of sexual morality known as "Free Love." According to this code, all legal, social, and conventional restraint between the sexes, when adverse to inclination, is immoral, licentious, and sinful. Connubial fidelity, when either party loves in another direction, becomes prostitution; whilst that which the world so stigmatizes, becomes, when prompted by natural affection, a virtuous and holy indulgence. The motto, "Highest Freedom is compatible with strictest virtue," embodies the doctrine. Translated into plain English, it reads: "Promiscuous intercourse is not necessarily immoral." Only one thing is required to chasten and purify it, and that is, the bond or motive of love.

Before me is a tract of thirty-two pages, very neatly printed, entitled "Social Freedom. Marriage as it is and as it should be." I take it to be a faithful exponent of the "Free Love" doctrines. It denounces marriage, "as now instituted," because it "binds the parties in the slavery of

Digitized by Google

ownership; refuses the soul the right of expressing itself beyond its imprisonment." That is to say, it enforces chastity. The requirements of fidelity in married life are denounced as "wolverine habits that go by the name of law and order." "Blasting slaveries," "social corruption," "hymenial adultery," "prostitution in the sight of God," and a multitude of like expressions, are constantly hurled in wrath and venom against the institution of marriage. "Will you," the writer asks, "will you, oh! man, be guilty of soul-murder by refusing woman the right of being the object of your love? Will you iron-case the crystal spring lest another thirsty soul may drink and be refreshed on the water of life? Love *me* only, is selfish. Love *me* only, is the voice of undisciplined and unspiritual passion. Love *me* only, is the sacrifice of the body and soul to lust." * * "If by my fidelity to love and faith the soul of my wife has become large and free, have I not reason to rejoice that others are blest by the sweetness and beauty of this flower of Eden?" etc.

Such is a specimen of the language and sentiment which characterize the "Free Love" literature. It is remarked by Buckle that the American mind is preëminently inductive. No *deductive* reasoning could possibly lead to such conclusions. There is no system of morality in Christian or Pagan lands from which such beastly deductions could be extorted. The creed is but the defense of the conduct. When men do wrong, or desire to do wrong, and are ashamed or afraid to own it, they set to work to frame a defense or an apology. They torture their brain to weave a veil that shall conceal them from their own consciences. Henry the Eighth determined to get rid of his queen, and in pursuit of the resolution, sought and found an excuse. The thought that she had been the wife of his brother, though it had presented no obstacle to his marriage with her, caused him, when he contemplated divorce, to shudder at his crime of incest. Henry was a royal free-lover, and ought to be canonized by the modern disciples of that faith.

Domestic quarrels, infidelity and divorces, are nothing

Digitized by Google

new in human history. Neither is the indulgence of lust. In a question of private vices, it is difficult to compare one period with another—to determine whether our own is worse than some past ages. When Chesterfield had completed the terms of a separation between his brother and his brother's wife, he wrote: "I have at last done the best office that can be done to most married people." This was more than a century ago. A celebrated English writer, referring to the same period, declared that a "woman of delicacy was not to be found in those days;" and again, "in those days every man liked his neighbor's wife better than his own." But vice was called vice nothwithstanding, and virtue, virtue. The marriage contract was sacred in theory, and concubinage was under the ban. It was reserved for our own times to stigmatize fidelity to the matrimonial compact as prostitution, and to invest libidinous indulgence with the robes of virtue.

That the advocates of the doctrines in question are strictly honest in their belief, will not be denied. The very absurdity and enormity of the doctrines is presumptive evidence that they are honestly entertained. When a man claims to be the Savior of the world, or the God of the universe, his sincerity is not disputed. Honesty is an essential element of fanaticism. There is more honesty, I am sorry to say, in fools and madmen, than in the average of rational men. The error of doctrine is of the brain, rather than the heart. The heart first strays from the path of virtue, and then the head comes in to prove that evil is good, and good, evil.

I have dwelt the longer and the more earnestly on this topic, on account of having my sympathies enlisted very recently in two families, whose peace and harmony have been destroyed by the free-love delusion. Only a single pair were involved by the wiles of the serpent of Eden. The modern serpent of "free-love," poisons the happiness of three living generations at once; bringing mortification and anguish to the aged, and an inheritance of reproach to innocent children. Let it be branded before the world as

Digitized by Google

a harlot, foul and debauched, clad in the garments of a Sister of Mercy.

The human family is subject to epidemic visitations, not only affecting the body, but the intellect also and the moral faculties. Delusions such as lycanthropy, vampyrism, and witchcraft, have overcome the popular mind, and reigned supreme for a season. At one time, honesty seems to have departed, and defalcation and fraud prevail. Again, the epidemic influence affects the moral character, and develops violence in the form of robbery, murder, and suicide. At such periods, we shudder at the great increase of evil and lament the degeneracy of the times. But if we look back to the past, we shall find that there is nothing new in the seeming retrogression, and that history is only repeating itself. Twenty-two years ago, an English writer * penned the following statement having reference to crime in Great Britain: "It is very difficult to refrain from the conclusion that we are, just now, living in the presence of an increased accumulation of greater crimes than has been before witnessed by the present generation. We do not forget the notorious criminals of the first portion of the present half century, the Thurtells and Fauntleroys of that day; but there was not that fearful constellation of crime, as we may term it, which we witness in these days, and which almost every week increases, by some deed, which, either in the depths of the sin, or the rank of the sinner, shocks and distresses the whole nation. Murders, forgeries, suicides—suicides, forgeries, murders—to say nothing of other sins, have come upon us alternately with fearful frequency, and in high places as well as low. No sooner has one case spread over the whole kingdom, than another occurs to eclipse it, or to dispute a place with it in the public mind. The legislature, commerce, the race course, the private family, alike contribute to swell the list. The single apartment of the working classes, and the stately halls of the aristocracy, are equally the scene of lamentation, mourning and woe."

* "English Churchman," quoted by Elam, in "A Physician's Problems."

Digitized by Google

That the fatherland could so lately exhibit a picture equal in the darkness of its hues to that which our own crime-stricken country now presents, may serve to lighten the load of despondency which weighs down our hearts in view of the prevailing epidemic of fraud and crime.

It is well to study the influence of epidemic mental perturbations on moral conduct—the effect of certain "agitations," as they are called, on the prevalence of vice and crime. We have seen very lately a "hemp" agitation, in which violence has been openly and continually threatened by one class against another. Fire and slaughter have been proclaimed habitually amid the applause of thousands, and the daily press has served up to the people every morning the incendiary hell-broth, until even our children have grown inured to the vocabulary of felons, and familiarized with the idea of violence and bloodshed. What wonder that such schooling should train up an army of robbers, garroters, and murderers! What wonder that the burglar is emboldened to enter our dwellings at noonday! What wonder that our citizens walk the streets under peril of their lives!

Of a different character, but equally diffusive and potent, is the influence on private morals exercised by the host of clairvoyants, mesmerists, astrologers, fortune tellers, trance mediums, healing mediums, materializers, and spiritists of all kinds, whose numerous advertisements in the newspapers, and announcements of lectures and exhibitions, sufficiently attest the profits of their jugglery and the abundance of their victims. Spiritism has now been on trial for thirty or forty years, and there has been ample time to develop its good, if there be good in it. And what has it done? What has it given to the world, of science, of morals, or of material value? It has revived old superstitions and developed new ones. It has crazed no small proportion of its devotees, and bewildered and intoxicated a still larger number—for it is of itself a sort of psychical drunkenness. It has resuscitated the effete necromancy of Paganism, and distributed over the world a crowd of strolling jugglers, to

Digitized by Google

desecrate the memories of the venerated dead with the tricks of legerdemain.

Far be it from me to charge spiritism with a direct agency in the production of feticide. I speak of its indirect and incidental operation. "Tell me your company and I'll tell you who you are," says an old adage. We judge of men and things by what they bring with them, as well as by what they do and what they are. Food, otherwise nutritious and wholesome, may convey into the body the most pernicious parasites. A neat housewife will scarcely welcome into the parlor her best friend, if his boots be covered with mud. An angel would scarcely gain admittance if, were such a thing possible, he were covered with vermin. I charge upon spiritism that it is infested with vermin; that its garments are covered with parasites; that it and its concomitants debase the character and standard of the popular faith and the popular logic, substituting visionary speculations for science, dreams for truth, and the illusions of fancy for the realities of life; that it peoples society with professional mountebanks and impostors; that it builds a nest that receives the egg that hatches the serpent that tempts the woman to put to death her unborn offspring.

Another department of the literature of feticide is the newspaper press. Abortionists find profit enough in their nefarious trade to pay well for advertising. Of course they do not say openly what they mean. They dare not do so, nor would the newspapers admit their advertisements if they were put in plain English. But there is a flavor in these announcements as significant to lechers and prostitutes, and to "unfortunate females," so called, and to married women who possess not the womanly nature—a flavor as easily detected as the scent of the master's foot by the hound. All advertisers for the cure of "private diseases" and "weaknesses," may be set down as abortionists; and not only so, but as the most unprincipled and villainous of the entire class. Under the guise of "removing obstructions," the hint is conveyed; or by the hypocritical caution, "not to be taken during pregnancy."

Digitized by Google

Instruments for preventing conception are extensively advertised. A few years ago several hundred instruments of this kind were sent by mail from the East addressed mainly to respectable married ladies in San Francisco. The Postmaster, having discovered their nature and design, refused, under instructions from Washington, to deliver them.

It is lamentable that this obscene literature of the newspaper press cannot be kept out of the homes of the families of our people. There are a few papers which exclude them, but they are few. It is not to be expected that the laws and customs of trade should yield to considerations of virtue and public good in the face of the millions of dollars annually paid to subsidize the press directly and indirectly, to the advocacy of prostitution and feticide.

But what excuse can be made for the admission of such advertisements in religious periodicals?—for it can not be denied that the religious newspaper press is largely contaminated by advertisements which are positively mendacious on their very face, if not obscene and otherwise immoral. It is sometimes alleged that the religious editor has nothing to do with the advertising department and is therefore not responsible. He yields a pious obedience to the injunction not to let his left hand know what his right hand doeth. His religion is that of the robber who condones with his conscience by giving to the church half the proceeds of his crime.

An impression prevails very extensively among women that the life of the embryo begins only with its sensible manifestations; that up to this period the condition is equivalent simply to an arrest of the menstrual function, and that the function can be restored by certain medicines. Ignorance in these matters is to a great extent voluntary and self-imposed. Women who are bent on defeating the course of nature enjoy a delusion that puts the conscience to sleep. Pains should be taken by professional men to inculcate the truth in these respects—to teach that the life of the embryo begins with gestation—that its destruction

Digitized by Google

at any stage is criminal—that this can be accomplished only through violence done to the mother—that the attempt always endangers her life, and that success in the design is liable to be followed by uterine displacements and disorders which break down the health, and are likely to impose on the offender against the laws of nature a life-long sentence of torture.

Worse even than ignorance is the character and quantity of knowledge concerning the sexual physiology disseminated through the press either in newspapers or in pamphlets and books more or less privately circulated, or imparted by itinerant lecturers. There are men and women who appear to possess a buzzard appetite for such moral carrion, and who revel in the fetid atmosphere. Their teachings invite a class of persons who seek the knowledge only for sensual and vicious purposes; who gather poison, not honey, from the flower; who realize the idea of the danger that may flow from "a little knowledge." To such inquirers after truth it is a matter of great interest to learn that there is a period in the course of her mensual cycle when the female may be approached with impunity. There is no question that this idea, false as it may be regarded practically, has led to a great amount of seduction and prostitution.

Feticide then, in its aggregate form, is the final result of many influences more or less remote in their origin, diverse in their character, physical and psychical, open or disguised, tolerated, encouraged, or condemned by society. Among these we enumerate aversion to marriage, fear of the pains and perils of child-bearing, ante-maternal hatred of offspring, calculation of the cost of rearing children, unmotherly objection to large families, newspaper advertisements and other emanations from the press, the obscene literature of "free love," the delirium of spiritism, the impulse of passion, the concealment of shame. From these seeds the sacrifice of a million of human germs is the bloody and exhaustive harvest which our nation suffers year by year.

Digitized by Google

In presenting this subject I have labored under constant difficulty, in the endeavor to express myself intelligently and emphatically without the use of language offensive to good taste. The theme is in itself so disgusting that nothing short of necessity would justify its public discussion. It is a painful acknowledgment that such a necessity exists.

Digitized by Google

REMARKS ON THE THEORY AND TREATMENT OF DIPHTHERIA.

BY J. T. WELLS, M. D., OF BAKERSFIELD.

The unprecedented prevalence of the dreaded malady diphtheria, during the past year, has induced me to place before you a theory, on which is based a treatment that has been remarkably successful, and which I have been forced to adopt from careful observation.

If, as is the recognized theory, this is a zymotic disease, with constant pathological symptoms, and if the exudation and blood of diphtheritic patients *always* contain the different forms of bacteriæ, which appear to be merely different stages of development of the same germ, it seems strange that some bactericide could not be found by which the ravages of this pestilence would be controlled; but among the multitude of treatments adopted there seems to be no remedy on which we can rely with as much hope and confidence in the treatment of this disease as we do in almost every other disease amenable to treatment. The theory that this disease is produced by "insufficient drainage" will not obtain in the country, where it has been more prevalent and fatal than in cities, for up in the foothills of the Sierras where drainage is perfect, where the clear water from the melting snows comes rushing down its pebbly bed, where no malarial complications ever exist, where the atmosphere is pure, or impregnated with the odor of the pine, even at and above the snow-line, it has reveled in its mad havoc, and taken off most of the brightest and healthiest children attacked.

It must then have some other ætiology whose nature remains to be more fully investigated and demonstrated.

Digitized by Google

But that it is a blood poison of the most virulent type there should no longer remain any doubt. Eberth, in Ziemssen's Cyclopædia, Volume I, page 592, says: "Without micrococci (spherical bacteria) there can be no diphtheria." Again, in Volume III, of the same work, in speaking of anthrax in animals and man, both Virchow and Hensinger regard that ceptic contagious disease, in which a single drop of blood was estimated by Davaine to contain from eight to ten millions of bacteria, as due to a specific ferment by which these bacteria are formed, and the oxygen of the blood by these consumed. The same authority also states that the millionth dilution of such a drop of blood will produce anthrax. Also, "whether these germs originate from the soil, or becoming dried up, as the remains of a case of the disease, adhere to some object, sooner or later they get free by some mechanical influence, or by accidental contact become mixed with water. Small and light, they are wafted by the breeze, and are either directly breathed in, or they fall upon the fluid or solid food and with it enter the body. Such bacterial germs suspended in the air may be washed down by rain, or conveyed to a great distance (by wind) and deposited in any place whither chance may carry them."

The same, or a similar theory is claimed of diphtheria, viz: that it is essentially a blood poison of the most virulent type, a constitutional disease, a morbid process of fermentation in the blood induced by the introduction or formation of micrococci, either by exogenous or endogenous methods, by which the temperature is increased first, the physiological and chemical changes in the blood and tissues are gradually intercepted, altered, or replaced by the exudations containing these germs. I cannot regard it as a local disease with a subsequent ceptic contamination of the blood, brought about by the absorption of the so-called putrified membrane, for fever is *always* present *before* the exudation appears, and *local manifestations of the disease are not even always present.* I have often seen severe diphtheritic fevers, with every symptom of the usual form of the

Digitized by Google

disease present, except the coating on the tonsils, developed in children, and in adults in some instances, while other members of the same family were suffering with diphtheria, and in others, subsequently to their recovery from the disease.

Again, it cannot be regarded as a local throat disease, because the tonsils and palate are by no means the only parts of the body on which the exudation appears. In a recent case of malignant diphtheria, I saw the false membrane on the mucous membrane of the vulva and rectum, and I have often seen it on the hands and legs where there happened to be a small cut or sore when the disease appeared. What part the estimated million of sheep that have died, decayed, and impregnated the air of the San Joaquin Valley during the past year, has played in the production of this disease, is a subject worthy of consideration and investigation.

The real object of this paper, however, is to briefly consider why the tonsils are most frequently affected in this disease, and its treatment. The tonsils are less protected than almost any other gland or organ in the body, being of a very delicate, spongy, histological structure, and being covered by one of the thinnest and most delicate mucous membranes in the body, exposed to friction in deglutition, and in all movements of the tongue, and to different temperatures and currents of air loaded with dusts and germs, are rendered thereby more susceptible to the action of any morbific agent; and so we find the tonsils in the vast majority of persons of all ages, from dentition to age, the seat of a low grade, painless, catarrhal inflammation (aside from their being nearly always affected in ordinary coughs and colds and measles), which inflammation eventually destroys their shape and size, leaving them irregularly excavated, or entirely destroyed, so that very often no vestige of them remains between the pillars of the fauces.

From statistics kept by me during the past year there is not one child of four years old in every five who has healthy tonsils, and not one adult in fifteen. These data are taken

Digitized by Google

from children and persons who claimed to have perfectly healthy tonsils, and who, to their knowledge, had never had any throat disease. Whether this condition exists in other parts of the State or not I have not ascertained, but in the southern part of the San Joaquin Valley such is the fact. Being then in the majority of cases in a preëxisting pathological condition, the tonsils offer less resistance to any toxic influence of the blood, and the exudation is rather facilitated than retarded on them, and appears there first.

In accordance with the above theory I use but little, and in many cases no local treatment, consisting of a mild astringent and antiseptic gargle, containing sulphurious and carbolic acids with alum and tincture of cinnamon, carefully avoiding all irritant and caustic applications to the throat, but rely solely on the administration of quinine, salicylic acid, and tincture of iron, given in heroic doses, in syrup or glycerine; and if this combination is not well borne by the stomach, as is frequently the case, I give quinine alone, and to obviate the unpleasant taste I first let the patient hold in the mouth for a few moments a little tincture, fluid extract or strong infusion of yerba santa, which, by coating over the papilæ of the tongue, entirely and most effectually prevents any bitter taste, and enables the child to better take and retain the medicine.

The following is the prescription I frequently use as a prophylactic, and in the treatment of the disease:

℞:
Quiniæ Sulph., ʒiiss.
Acid Salicylic, ʒi.
Tr. Ferri-chloride, ℥ss.
Syr. Simplicis, q.s. ʒviii.
Signa: Give a tablespoonful every hour until some deafness supervenes.
As a prophylactic: A teaspoonful morning and evening.

If the pulse and temperature are high I increase the quinine proportionately—the higher the fever the larger the dose—I often give as much as from ℈i. to ℈ii. of quinine

Digitized by Google

to a child five or six years old at one dose, and never rest satisfied until the patient is cinchonized, however small or great the quantity to produce this effect is required. If it is rejected by the stomach I give it per rectum, and it will be observed that there is an astonishingly unusual tolerance to quinine in this disease, requiring frequently as much as sixty or one hundred grains to produce ordinary cinchonism. In a recent case of an adult, I gave one hundred and fifty grains in twelve hours before any characteristic effects of its administration were produced.

The anti-pyretic effect of quinine is as palpable and as well proven as its anti-periodic effect, and is accompanied by a *sedative* effect on the nervous system, and when anti-pyretic doses of quinine are given, when the fever of diphtheria is *subdued* by it, and *not abated* as by the ordinary "fever drops," the temperature does not rise again, and the patients rapidly recover if the effects of the quinine are perpetuated for 24 or 48 hours.

In another recent case of malignant diphtheria, a boy six years old, whose tonsils, palate, and pharynx were coated with the false membrane, whose pulse was 140, and temperature 103°, I gave 30 grains of quinine at the first dose, and in three and a half hours I had the satisfaction of seeing the temperature reduced to 98°, and the pulse to 100 per minute, and the only unpleasant effects produced by such a large dose was a reflex nausea; and the effects beginning to pass off in eight hours 10 grains more were given per rectum, and repeated in four hours. This child had no more fever during the entire course of the disease, because the blood poison was arrested, the bacteriæ in the blood were destroyed and their formation stopped, and the disease converted from a constitutional blood poison into a local throat disease, which only remained to be treated by the gargle.

If, in the antidotal treatment of poisonous snake-bites, we are justified in administering from one to two pints, or even more, of alcoholic stimulants to a child that under ordinary circumstances would be inebriated by one ounce

Digitized by Google

and poisoned by a gill, *is it not rational* that in the treatment of diphtheria—a blood poison *more rapidly fatal*, for it kills children in from forty-eight to sixty hours—we should use equally heroic measures? From three to six grains of quinine at a dose have no more efficacy in subduing the blood poison of diphtheria than has one or two spoonfuls of whisky in subduing the poison of a rattlesnake bite, and children that recover under such treatment would, in my opinion, get well without any treatment, for diphtheria is a disease that presents itself to us like scarlatina and measles, in different degrees of intensity, often requiring little or no treatment, and at other times most rapidly fatal, dependent upon the activity and rapidity of the process by which the bacteria are formed—a specific ceptic fermentation—by which process I believe the poison of diphtheria to be caused and propagated, and which I am confident that quinine and salicylic acid will prevent and arrest in the system as well as out of the system if heroic doses are given internally (cinchonism produced), or if saturated solutions are used out of the system it destroys the vitality of the yeast plant—bacteria.

Out of thirty-five cases treated in accordance with the above principles all have recovered, and I have not seen a case that died after cinchonism had been produced in the first twenty-four hours of the attack.

The most rapidly fatal cases of diphtheria that have come under my observation, are those that begin with vomiting, in which the stomach seems to be the organ primarily attacked, and the more unsettled the stomach, the less favorable the prognosis In these cases, all medicine and food should be given per rectum, and the vomiting allayed by Hope's camphor mixture, which seems to exercise a most beneficial influence.

Sincerely believing that the adoption of this treatment will save the lives of many promising children, I submit it for your calm consideration and trial.

Digitized by Google

DOCTORS AND LAW-MAKERS.

BY Q. C. SMITH, M. D., OF CLOVERDALE.

It is with extreme diffidence we approach this much hackneyed subject; and more especially so, being aware that the views we entertain concerning this absorbing topic are diametrically opposite, in some respects, to those published by many of our fellows. And, although we have heretofore faithfully and loyally labored with them—and will continue to do so—in pursuance of such lines of policy as the majority dictated, yet we must say, in justice to ourself, that our own judgment has long differed from the views held by those of our professional brethren, who seem to think that if legitimate scientific medicine is to flourish, and honorable physicians get an honest living, we must seek higher legal recognition as a profession, and more secure legislative protection as individual practitioners. Or, in other words, they would have us say to the public, by our actions, that our professional labors possess no substantial real merit of importance to the people at large; but that we, as a profession, are merely *ornamental parasites* upon the body politic. That we, like a tender exotic, cannot withstand, unprotected, the withering effects of impartial public opinion and action. And that, therefore, we should go supplicating around legislative halls, crying: Have mercy upon our poor helpless condition, oh, our mighty Lycurgus-fathers! for if we are not speedily and surely succored, and protected from the ravages of the devouring horde of insociable quacks and charlatans, our worthy and valuable profession will soon be utterly destroyed from off the face of the earth!

Digitized by Google

Now we cannot doubt, for a moment, the honesty or high honor of any professional brother who has led or joined in the popular appeal for more legislative protection for individual members of our profession. But we certainly do doubt the *wisdom* of such policy. And to say that it has been utterly futile would certainly be putting the case very mildly. And as long as the supplicative policy is pursued, the *populace* will continue to *imagine* that regular physicians are endeavoring to get a *corner* on the practice of medicine. And until the minds of the masses are entirely disabused of this false and pernicious idea, our efforts to get them to assist us in abating quackery and other public nuisances, and to lend efficient aid in carrying forward sanatory reformatory measures in general, to their practical application, we will, as a profession, be unable to successfully apply many of the best ideas pertaining to State as well as clinical medicine.

And the utter failure of the efforts physicians, unassisted, have made to abate quackery and many other great public nuisances, it seems to us, should certainly be sufficient proof to convince any unbiased mind that the supplicative line of policy, as for years heretofore pursued, will ever continue to be unsuccessful, to say the least of it. For it is certainly very humiliating to any regular honorable physician to be taunted with the idea that he is at the mercy of quacks and charlatans. As for our own individual part, we have ever made bold to say, whenever an occasion offered, at home or abroad, that we live, professionally, above and in open defiance of quacks and quackery, the *whims* of the populace to the contrary notwithstanding. For we consider the regular, honorable, live working physician as an indispensable requisite to civilized society, as the farmer, mechanic, or school teacher.

We know it is easy, and too common to find fault with the existing state of affairs, in regard to any measure or subject; and it is with great reluctance that we play the

Digitized by Google

role of fault-finder in this matter. And did not a consciousness of a high sense of duty, both to ourselves as promoters of free honorable scientific medicine, and the general weal of public interests, impel us to raise our voice in opposition to the clamoring tide, we would have certainly remained silent.

Certainly, scientific medicine of to-day is able to cast aside the swaddling clothes of helpless infancy, and don a more dignified costume than the puerile and hampering trappings of so-called *legislative protection*. For indeed, in the past history of medicine, nothing stands forth more prominently to the mind of the contemplative philosopher, or presents so saddening a feature to the sensibilities of the true devotee of Esculapius, as the significant fact, that in every country and in every age which could be classed as *protective epochs*, our noble science, while existing under the protective ægis of kings, potentates, or legislative powers, steadily declined in grandeur, stagnated or retrograded in progress, and diminished in usefulness.

These facts, and many more of a similar character and tendency, being historical and incontrovertible, does it not become our bounden and sacred duty as representative physicians of the present day and hour, to take heed to the instructive lessons that misguided zealots of the past have left us, the results of which so sadly mar the otherwise bright pages of scientific progressive medicine? For indeed, our worst enemies have been of those of our own household. The pages of history are luminous with evidence that indubitably proves that the more that honorable scientific medicine is hedged about with so-called royal or legislative protection, the more it becomes circumscribed in its capabilities, hampered and curtailed in its beneficent functions, dwarfed in its energies, shorn of its glories, and thus cruelly crushed by the suicidal acts of its own children. For the so-called protection of honorable scientific medicine, be it from royal signet or legislative seal, has ever resulted in oppressing and fettering honorable physicians, and in giving legal license and increased influence

Digitized by Google

and respectability to soulless demoniacal quacks. And so it will ever continue to be, for human nature will ever be the same, and history from age to age has and will ever continue to repeat itself. And as we have sailed as a profession in our own day and country for many years on the supplicative tack, and now find ourselves even farther from, rather than nearer to the desired haven, would it not be in keeping with the dictates of philosophy and common sense to change our tack and tactics?

Being fully conscious of our inability, individually, to originate and elaborate the best plan that could be devised for the accomplishment of the desired end in this matter, we would most respectfully merely suggest some of the salient points in outline of the policy which we would deem, if put in force, most likely to accomplish some of the desired results. To that end we would say, physicians as a collective representative body should confer together, from time to time, and elaborate and set in order such ideas and plans as pertaining to sanatory medicine in its different departments, in its practical application to the needs of the country at large and to the different parts of it, that if faithfully carried out in the proper way and manner, would be most likely to produce the desired result. And at the proper time said plans should be laid before our legislative authorities with an earnest request that they promptly examine into the merits of the same, and take such action thereon as they may consider most likely to conduce to the best interests of those whom it is their bounden duty to faithfully represent. And accompanying aforesaid plans and request, should be a most emphatic declaration that we, as regular practitioners of honorable medicine, neither need or ask any favors or protection from legislative authorities other than is granted to citizens of any other class or vocation. And as for quacks and quackery as public nuisances, tell our law-makers most distinctly, that having done our duty as physicians, the blame will then lie at their door if those whose dearest interests they have sworn to foster and protect are cruelly robbed of their gold, and worse still, of

Digitized by Google

that which gold cannot replace, omnipotent as it is, good health.

And further, that we, as a profession, and as individual practitioners of honorable medicine, are abundantly able to take care of *ourselves* without the fostering assistance of any special class legislation in our favor. In times past we have, as a profession, in the earnest warmth of our impulsive zeal, but with honest intent and noble purpose, too long labored at great sacrifice to bring about the much to be desired reform in regard to the regulation of the practice of medicine. And with what utter want of success; we have only to look up and down throughout our common country for the disheartening and mortifying answer, which is certainly very strong evidence in favor of the line of policy we advocate; *i. e.*, that we, as a profession, should have maintained a bold, independent attitude in this matter, and have left the execution of such laws as may have been enacted for the purpose of regulating the practice of medicine, and the abatement of quackery and other public nuisances, entirely to those whose legitimate business and sworn duty it is to see that they, in common with other laws of the land, were faithfully obeyed. For such functionaries only have the power to enforce obedience or receive proper remuneration therefor, neither of which obtain in the case of physicians.

And as to the matter of honorable physicians using their professional influence at home, to get political place and power, or encouraging and assisting the "lobbying a bill through the Legislature," it seems to us that they, in so doing, must most foully smirch the fair habiliments of honorable medicine. And such a course seems more reprehensible still, when we consider that the results of such detestable action are far worse than a nullity. Of course, we refer to characters and not to particular individuals.

But notwithstanding what we have said, we would not have physicians, either individually or as a collective representative body, to idly sit with folded arms, stolid spectators of the monstrous impositions that are daily being

Digitized by Google

practiced upon our unfortunate fellow-citizens, regardless of the fact whether or not said unfortunates were the active or passive agents in the cause of their own injury or ruin. Far from us be an intent so sordid, or a design so basely avaricious. For we are strongly persuaded that much of the want of confidence that the common public manifest toward regular medicine, is the legitimate result of the errors of policy or practice heretofore carried out by regular practitioners. For you will remember, that it is regular, honorable, live working physicians *only*, whom we have adjudged to be an indispensable requisite to society, or worthy of the esteem and confidence of their fellow-citizens. For the greatest delight of every true disciple of Esculapius consists in ceaseless effort to perfect himself in the various branches and resources of the healing art, that he may thereby enable himself, by a diligent application of the same, to relieve or prevent the greatest possible amount of human suffering.

Digitized by Google

REPORT OF COMMITTEE ON NECROLOGY.

BY BENJ. R. SWAN, M. D., OF SAN FRANCISCO, CHAIRMAN.

It becomes my duty to report to you, that since the meeting of the society in April, 1877, two of our number have passed away.

The first in order. JOHN CHARLES VAN WYCK, M. D., who died at Oakland, August 19th, 1877.

The second. PHELPS CHAMBERLIN, M. D., who died at San Francisco, October 19th, 1877.

Besides these, I have not learned of any other case.

It will be remembered that both Dr. Van Wyck and Dr. Chamberlin were Chairmen of their respective committees; and in the printed transactions of the society, 1876-7, are to be found the report on "Prac-

Digitized by Google

tical Medicine," by the former, and the report on "Obstetrics," by the latter.

Believing that something more than a passing notice was due the memory of each of these gentlemen, and that it would accord with the wish of the society, I asked Dr. Clinton Cushing of Oakland, as the one best fitted, to pay a tribute to the memory of Dr. Van Wyck, and Dr. Henry M. Fiske of San Francisco, to the memory of Dr. Chamberlin.

I am happy to say that each responded, and the memories forwarded to me are herewith presented:

JOHN CHARLES VAN WYCK.

The subject of this memoir was born in Baltimore, Maryland, January 1st, 1828. At the age of eighteen he began the study of medicine in the office of the late Dr. Nathan R. Smith of Baltimore, and graduated at the University of Maryland in 1848, in the same class with Dr. Cabanis of Siskiyou, and Dr. Hammond of San Francisco. He was one of the attending physicians at the Baltimore Almshouse Hospital for some time, and practiced his profession for a short time in Louisiana, and afterwards in and near Baltimore until 1863, when he came to California, and after spending a year in the silver mining region of Nevada, he settled down in Oakland, where he practiced medicine until his death, August 19th, 1877.

He died suddenly while in almost perfect health, of angina pectoris.

Dr. Van Wyck's tastes were in the direction of surgery, and at the time of his death he held a leading position in that department of medicine in Alameda County, and had probably performed more capital operations than any man in the county at the time of his death.

He became a member of the State Society at its reorganization in 1870, and was a regular attendant at its meetings. He also contributed numerous scientific papers to the society, which will be found in the various printed transactions; and at the time of his death was one of our Board of Censors.

He was also one of the most active and zealous members of the Alameda County Medical Association, was one of the original founders, and was among the first Presidents of the organization.

To those who knew him well, to speak of his many good qualities would be superfluous; but it is only just that the members of this society should know that we have lost a member whose character was above reproach, one whose friendship was unfailing, and a man who was the very soul of honor.

Many were the deeds of charity and kindness that I have known him to do, and his liberality and generosity were only limited by his means.

Dr. Van Wyck was a consistent and conscientious member of the Episcopal church, and he died as he had lived, an honest, upright, warm-hearted, Christian gentleman.

Digitized by Google

PHELPS CHAMBERLIN, M. D.

Was more than an ordinary man. Born in Northern Vermont. At an early age, half-orphaned, and while yet of tender years, compelled to labor for the support of a widowed mother and helpless sister, the lessons of hardship and endurance he then received were of great benefit to him in after life. His primary education was wholly obtained in the country schools of those days, and in them he studied assiduously during the short Summer and Winter terms, laying the foundation of the mental structure that was to be the basis of his future life-work. Early he formed the design of studying medicine, and commenced it with an uncle then residing in the new section of country called the American Bottoms, in the State of Illinois. While intensely pursuing this favorite study, the gold fever then raging throughout the world seized him, and in the Spring of 1849, with a company of emigrants he left for California, crossing the plains with ox teams, himself being one of the drivers. They entered the State by the old Carson trail, and pitched their tents at Hangtown, now Placerville. As a miner he was successful, and in 1851 he returned East to prosecute his studies; in 1852 he graduated from the St. Louis Medical College, and in the Fall of that year he returned to California, relocating at Placerville, where he became a successful practitioner, and so enjoyed the confidence of his fellow citizens of that then large and flourishing city, that he was frequently elected Mayor. When the silver fever of Washoe broke out in 1859, he recrossed the mountains with his family, and settled in Genoa in the then Territory of Utah. On the organization of the Territory of Nevada, he was elected one of the first Councilors. He took an active part in the organization of the Territory, as well as the organization of the State—thus making him a pioneer of both California and Nevada. Some twelve years since he removed to this city (San Francisco) and commenced a medical career which is well known to the physicians of the State. He was always eminently successful as a practitioner. For all, he ever had a kind word and a pleasant smile. His acts of charity and benevolence were numerous, and it is safe to say that none ever appealed to him for help who were worthy, who were turned away empty-handed. He was in every sense a kind husband and father, a genial and pleasant gentleman, a model and faithful physician, and an honest man.

As a warm friend and admirer, I could not say less; as a physician, one who has been associated with him for twenty-five years, I can testify that I knew him well, and his affabilities and pleasantries now come up to me through that long time re-testifying to his ability and worth.

Digitized by Google

I. E. OATMAN, TREASURER, in account with CALIFORNIA STATE MEDICAL SOCIETY.

1877.	Dr.			1877.	Cr.		
April 16.....	To balance brought forward.....		$660 37	April 27.....	By cash paid Dr. Tyrrell, as per vouchers—$2 50, $14, $7 93, $4 10, $40, $100, $6 55.....	$175 08	
April 27.....	To cash per Dr. Tyrrell—dues.....	$740 00			By cash paid advertising, Record-Union	6 00	
October 2....	To cash per Dr. Tyrrell—dues.....	160 00		May 2.....	By cash paid W. A. Grover, M. D.	100 00	
October 2....	To cash per Dr. Tyrrell—sale of			May 23.....	By cash paid H. A. Weaver, printing account.....	100 00	
1878.	Transactions.....	3 00		July 14.....	By cash paid H. A. Weaver, printing account, balance.....	266 40	
April 13.....	To cash per Dr. Tyrrell—dues.....	35 00		October 17...	By cash paid Dr. Tyrrell, postage stamps.....	3 00	
			938 00	1878.			
				March 11....	By cash paid Jas. Simpson.....	250 00	
				April 13.....	By cash paid Dr. Tyrrell, as per statement and vouchers, viz.:		
					Wrapping paper.....$ 40		
					Printing..... 3 00		
					Stamps 8 00		
					Stamps 15 00		
					Certified copy articles of incorporation..... 3 25		
					Printing..... 8 00		
					Stamps..... 5 00		
					No voucher—stamps 1 00		
					No voucher—expressage 40		
						44 05	
							$944 53
				April 16.....	By balance.....		653 84
			$1,598 37				$1,598 37
April 16.....	To balance on hand.....		$653 84				

Digitized by Google

ANNUAL REPORT OF C. M. BATES, M. D.,

Treasurer of the State Board of Examiners of the Medical Society of California, to the Honorable Board of the Medical Society of the State of California, for the year ending April 15th, 1878.

CASH RECEIPTS.			CASH DISBURSEMENTS.		
1877.			1877.		
April 15.....	To cash on hand.....	$2 42	Sept. 13.....	By cash, Evening Bulletin.....	$7 00
October 13...	To cash, vouchers from Dr. Gibbons.....	32 15	Sept. 13.....	By cash, Daily Record-Union.....	6 00
October 13...	To cash, vouchers from Dr. Gibbons.....	18 85	Sept. 13.....	By cash, H. P. Babcock.....	10 00
Nov. 11.....	To cash, vouchers from Dr. Gibbons.....	15 00	Sept. 13.....	By cash, H. Gibbons, Jr.....	6 90
1878.			Sept. 13.....	By cash, W. A. Grover.....	2 25
March 12.....	To cash, State Medical Society.....	250 00	Nov. 10.....	By cash, A. L. Bancroft.....	20 00
April 1.....	To cash, applicants.....	29 25	1878.		
			March 12.....	By cash, Haight & Taylor.....	90 00
			March 12.....	By cash, P. H. Espina.....	15 00
			March 12.....	By cash, J. F. Montgomery.....	10 00
			April 12.....	By cash, H. P. Babcock.....	8 00
			April 10.....	By cash, Jas. Simpson.....	25 00
			April 10.....	By cash, H. S. Orme.....	55 00
			April 10.....	By cash, C. M. Bates.....	20 00
			April 10.....	By cash, seals.....	75
			April 10.....	By cash, rollers for certificates.....	25
			April 10.....	By cash, expressage.....	2 15
			April 10.....	By cash, postage stamps.....	25
			April 10.....	By cash, H. Gibbons, Jr., salary.....	100 00
		$347 67			$378 55
				To balance due Treasurer, April 15, 1878..	$30 88

Respectfully submitted.

C. M. BATES, M. D., Treasurer.

Digitized by Google

CONSTITUTION AND BY-LAWS OF THE SOCIETY.

ARTICLE I.

TITLE OF THE SOCIETY.

SECTION 1. This institution shall be styled "THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA."

ARTICLE II.

MEMBERS.

SECTION 1. The members of this Society shall consist of delegates from permanently organized local medical societies, ordinary and honorary members, who shall collectively represent and have cognizance of the common interests of the medical profession in the State of California.

SEC. 2. Each delegate from a local society shall hold his appointment for one year, and until another is appointed to succeed him, and shall participate in all the business and affairs of the Society on paying the usual dues of five dollars.

SEC. 3. Each local society shall have the privilege of sending to this Society one delegate for every five of its regular resident members, and one for every additional fraction of more than one-half that number of its members.

SEC. 4. Qualifications for membership shall consist of a good primary and medical education, attested by a diploma from some known medical school in good repute, and a good professional and moral standing in the community in which such candidate may reside. A license from the Board of Examiners of this Society shall also be required of every candidate.

Ordinary members—Every physician who shall properly satisfy the Board of Censors by the exhibition of his diploma that he possesses the necessary qualifications as prescribed, may become an ordinary member of this Society,

Digitized by Google

and all those who may hereafter serve in the capacity of delegates to the Society, together with such other persons as may receive the appointment by unanimous vote, shall thereby become permanent members; *provided*, that no physician shall be considered eligible to membership who may reside within any location where there is a local medical society, and who has failed to become a member thereof, unless there be some special reason assigned for his election, and no voucher or vouchers of any member or members shall be taken as satisfying evidence of any applicant's qualification for membership.

SEC. 5. Honorary members shall consist of such distinguished *savants* and others as may be deemed worthy of the compliment. They shall receive their appointment by a vote of the Society, and upon a motion of some member present.

SEC. 6. Each individual, prior to taking his seat as a member of the Society, must sign the Constitution, inscribing his name and address in full, specifying in what capacity he attends, and if a delegate, the local society which he represents. Every member shall be entitled to the diploma of the Society, to which shall be attached the seal* of the Society, and the signature of the President and Permanent Secretary.

SEC. 7. The seal of this Society shall always be kept by the Permanent Secretary.

ARTICLE III.

OFFICERS.

SECTION 1. The officers of the Society shall be President, four Vice Presidents, one Permanent and two Assist-

* The seal that has been adopted shows enough of the beautiful design of the seal of the State to declare the common origin of the Medical Society and of the State of California, while the cock that was wont to be sacrificed to Esculapius representing "vigilance," is crowing out 1870, the year of reorganization; and the serpent, emblematic of "sagacity and long life," lies entwined around the doctor's staff at his feet. Thus Vigilance and Sagacity typify the qualities a physician should possess under the direction of Minerva.

Digitized by Google

ant Secretaries, a Treasurer, and a Board of Censors of five members. These officers shall be nominated by a committee of one member from each county represented, on the morning of the second day of the meeting, and be elected by ballot, except Permanent Secretary. Each officer shall hold his appointment for one year, and until another is elected to succeed him.

SEC. 2. The President shall preside at the meeting, preserve order, give a casting vote in case of a tie, and perform all other duties that custom and parliamentary usage may require. He shall organize and open the meeting next succeeding his election, by an address on some subject connected with medicine, or with the interests of the Society. He may also fill by appointment all vacancies that may occur from death or other causes.

SEC. 3. The Vice Presidents, when called upon, shall assist the President in the performance of his duties, and during his absence, or at the request of the President, one of them shall officiate in his place.

SEC. 4. The Permanent Secretary shall reside in Sacramento, and shall authenticate the proceedings; give due notice of time of next meeting; shall serve as a member of Committee on Publication; shall preserve the archives and unpublished transactions of the Society; shall hold correspondence with other permanently organized societies, both domestic and foreign, and see that all the published transactions are promptly distributed to the members entitled to receive them. This officer shall not be subject to annual election, and shall not be removed except for cause shown.

SEC. 5. The Assistant Secretaries shall record the minutes, notify members of committees of their appointment, and of the duties assigned them; and, in the absence of the Permanent Secretary, one of them shall perform his duties.

SEC. 6. The Treasurer shall have immediate charge and management of the funds as a property of the Society, and hold them subject to the disposal of the Society. At each annual meeting he shall present a report, setting forth the

Digitized by Google

amount of moneys received, as well as the amount disbursed, and for what purpose.

SEC. 7. The Board of Censors shall examine the credentials of all candidates for admission to the Society, and if such credentials are found to conform with the requirements, as enacted in Article II, of this Constitution, the Board of Censors shall recommend said applicants to the Society as suitable candidates for election.

ARTICLE IV.

MEETINGS.

SECTION 1. The regular meetings of the Society shall be held annually, and commence on the third Wednesday of April.

ARTICLE V.

STANDING COMMITTEES.

SECTION 1. The following Standing Committees, each composed of five members, of whom the first named is Chairman, shall be nominated at every annual meeting by the President elect, for the purpose of preparing and arranging business for each ensuing year, and for carrying into effect the orders of the Society not otherwise assigned, namely:

On Practical Medicine and Medical Literature.
On Surgery.
On Obstetrics.
On Medical Topography, Meteorology, Endemics, and Epidemics.
On Indigenous Botany and the Domestic Adulteration of Drugs.
On Public Hygiene and State Medicine.
On Histology and Microscopy.
On Mental Diseases and Medical Jurisprudence.
On Medical Education.

Digitized by Google

On Publication.
Of Arrangements.
On Prize Essays.

SEC. 2. The Committee on Practical Medicine and Medical Literature shall prepare an annual report on the more important improvements effected in this State in the management of individual diseases; the improvements and discoveries which may have been made in Anatomy, Physiology, General Pathology, Therapeutics, and Medical Jurisprudence.

SEC. 3. The Committee on Surgery shall prepare an annual report on all the important improvements in the management of surgical diseases effected in the State during the year, and as far as can be ascertained, the number of capital operations performed, with their results.

SEC. 4. The Committee on Obstetrics shall prepare an annual report on the important improvements in the obstetrical art, and in the management of the diseases peculiar to women and children, effected in the State during the year, together with such remarks touching these subjects as they may think proper.

SEC. 5. The Committee on Medical Topography, Meteorology, Endemics, and Epidemics, shall prepare an annual report on the peculiarity of the soil and climate of the different sections of the State, with the diseases to which they are subject; also the endemics and epidemics which have prevailed throughout the State during the year.

SEC. 6. The Committee on Indigenous Botany and the Domestic Adulteration of Drugs shall prepare an annual report on the indigenous medical botany of the State of California, paying particular attention to such plants as are found to possess valuable medicinal qualities, and are not accurately described in standard works, and the localities where they are found. Also, to report on the quality of drugs brought to our market, with the view to correct the evils arising from the extensive introduction and sale of spurious and sophisticated articles.

Digitized by Google

SEC. 7. The Committee on Public Hygiene and State Medicine shall prepare an annual report on all subjects germane to this important branch of medical science.

SEC. 8. The Committee on Histology and Microscopy shall report and demonstrate such valuable facts and discoveries, annually, bearing directly or indirectly on medicine and surgery, as they may think proper.

SEC. 9. Committee on Mental Diseases and Medical Jurisprudence. This committee shall report on all psychological questions, and on such matters appertaining to medical jurisprudence as in their judgment may be deemed advisable.

SEC. 10. The Committee on Medical Education shall prepare annual reports on the general condition of medical education in the State of California, as compared with the state of medical education in other States of the Union, noticing the several medical institutions of the State, their course of instruction, the practical requirements for graduating, the modes of examination for conferring degrees, and the reputed number of pupils and graduates at each during the year; together with such other matters as they may deem worthy of consideration in reference to medical education, and the reputable standing of the profession.

SEC. 11. The Committee on Publication—of which the Permanent Secretary must constitute a part—shall have charge of preparing for the press, and of publishing and distributing, such of the proceedings, transactions, and memoirs of the Society, as may be deemed worthy to be published.

SEC. 12. The Committee of Arrangements shall be composed of members residing in the place at which the Society is to hold its annual meeting, and shall be required to provide suitable accommodations for the meeting, to report on the credentials for membership, and to receive and announce all voluntary communications made to the Society.

SEC. 13. In order to afford the Committee on Medical Topography, Meteorology, Endemics and Epidemics, and on Indigenous Botany and the Domestic Adulteration of

Digitized by Google

Drugs, material for their several annual reports, it shall be the duty of the several auxiliary societies in the State to transmit to the Chairman of these respective committees, on or before the first day of March of each year, a special report embracing such information touching their particular localities as may enable said committees to make full reports on all the subjects committed to them.

SEC. 14. The Standing Committees shall constitute sections, after the manner of the American Medical Association, to whom all papers shall be referred upon the first day of the session, and who shall report to the Society those papers that seem of sufficient interest for reference to the Committee on Publication; also those that seem of sufficient importance to be read before the Society, by title, abstract, or *in extenso*, upon the second day of the meeting.

ARTICLE VI.

VOLUNTARY CONTRIBUTIONS.

SECTION 1. After the reading and discussion of the annual reports, or at any other period during the meeting of the Society, by the vote of two-thirds of the members present, it shall be the privilege of any member to present to the consideration of the Society, either orally or in writing, communications on medical subjects, reports of interesting cases, or such other matters as may be deemed of interest to the profession, which communications may on motion be referred to the Committee on Publication, and if deemed by them worthy of preservation, shall appear among the proceedings.

ARTICLE VII.

FUNDS AND APPROPRIATIONS.

SECTION 1. The funds of this Society shall be raised by individual voluntary contributions, by the sale of its

Digitized by Google

publications, and by an annual tax of five dollars on each member of the Society, on the payment of which he shall be entitled to a copy of all the publications for the year.

SEC. 2. The funds thus raised may be appropriated for defraying the expenses of the annual meetings; for publishing the proceedings, memoirs, and transactions of the Society; for enabling the Standing Committees to fulfill their respective duties, conduct their correspondence, and procure the material for the completion of their stated annual reports; for the encouragement of scientific investigations by prizes and awards of merit, and for such other purposes as the Society may from time to time direct.

SEC. 3. Any member who shall fail to pay his annual dues for two successive years, unless absent from the State, or for other reasonable causes, shall be dropped from the roll of members, after having been notified by the Permanent Secretary of the forfeiture of such membership; and no member so dropped shall be reinstated in his membership until he shall have paid all arrears due by him.

ARTICLE VIII.

DELEGATES TO THE NATIONAL MEDICAL ASSOCIATION.

SECTION 1. The Society shall annually appoint, to represent it in the American Medical Association, one delegate for every ten members, and one for every additional fraction of more than one-half this number, whose certificates of appointment shall be signed and duly authenticated by the President and Secretary.

ARTICLE IX.

CODE OF ETHICS.

SECTION 1. The Code of Medical Ethics recommended by the National Medical Association, held in Philadelphia in May, 1847, having been approved and adopted by this Society, shall have the full force and effect of any Article of this Constitution.

Digitized by Google

ARTICLE X.

DISCIPLINE OF MEMBERS.

SECTION 1. Any violation of the provisions of the Constitution or of the Code of Ethics adopted by this Society, shall be referred to the Board of Censors for adjudication, from whose decision an appeal may be taken to the Society. Such violation being reported by the Board of Censors to the Society, and established to the satisfaction of a majority of the members, the individual or individuals thus offending shall be excommunicated, and deprived of all the privileges of membership.

SEC. 2. The Society shall have jurisdiction in all cases of appeals taken from auxiliary societies, in which event their decision shall be final.

ARTICLE XI.

AMENDMENTS AND ALTERATIONS.

SECTION 1. No amendment or alteration shall be made in any of the Articles of this Constitution, except at the annual meeting next subsequent to that at which such alteration or amendment may have been proposed, and then only by the concurrence of two-thirds of the members in attendance.

ORDER OF BUSINESS.

The following order of business is presented as a by-law of the Society, which shall at all times be subject to a vote of a majority of all the members in attendance, and, except temporarily suspended, shall be as follows:

I. Organization of meeting.
II. Report of the Committee of Arrangements on the credentials of members after the latter have registered their names and addresses, etc.

Digitized by Google

III. The calling of the roll.
IV. The reception of members not present at the opening of the meeting, and the reading of notes from absentees.
V. Reception of members by invitation.
VI. The reading and consideration of the stated annual reports from the Standing Committees.
VII. Reading and discussion of voluntary contributions.
VIII. The election of officers and place of annual meeting, and appointments by the President elect to fill the Standing Committees.
IX. Resolutions introducing new business, and instructions to the Standing Committees.
X. Unfinished and miscellaneous business.
XI. Reading of the minutes of the session about to conclude.
XII. Adjournment.

Digitized by Google

AMENDMENTS TO CONSTITUTION.

ARTICLE II, SECTION 4. Provided, that no physician be elected a member of this society from a county having a local society, unless he be a member of the same, or unless there be some special reason for his election.—[1872, Oct. 10th.]

ARTICLE IV, SECTION 1. Amended by striking out in the second line the words "second Wednesday in October," and inserting "second Wednesday in April," as the time for holding the annual meeting of the society.

ARTICLE III, SECTION 4. Making it obligatory upon the Permanent Secretary to reside in Sacramento, striking out that clause requiring the meetings of the society to be held in Sacramento, leaving the choice of such place with each session of the association.—[1873, April 10th.]

ARTICLE IV, SECTION 1. Changing the time of meeting to the third Wednesday in April.—[1873, April 10th.]

ARTICLE VII, SECTION 3. Any member who shall fail to pay his annual dues for two consecutive years, unless absent from the State, or for other reasonable causes, shall be dropped from the roll of members, after having been notified by the Permanent Secretary of the forfeiture of his membership; and no member so dropped shall be reinstated in his membership until he shall have paid all arrears due by him.—[1874, April 21st.]

ARTICLE V, SECTION 14. That the Standing Committees shall constitute sections, after the manner of the American Medical Association, to whom all papers shall be referred upon the first day of the session, and who shall report to the society those papers that seem of sufficient interest for

Digitized by Google

reference to the Committee on Publication; also those that seem of sufficient importance to be read before the society, by title, abstract, or in extenso, upon the second day of meeting.—[1874, April 21.]

ARTICLE II, SECTION 4. After the word "Censors," add "by the exhibition of his diploma;" and after the word "election," add, "and no voucher or vouchers of any member or members shall be taken as satisfactory evidence of any applicant's qualification for membership."—[1875, April 19th.]

ARTICLE II, SECTION 4. "Shall be entitled to permanent membership," to read, "shall thereby become permanent members."—[1875, April 19th]

ARTICLE III, SECTION 1. After the word "ballot," add "except Permanent Secretary."—[1877, April 18th.]

ARTICLE III, SECTION 4. After "them," add, "this officer shall not be subject to annual election, and shall not be removed except for cause shown."—[1877, April 18th.]

ARTICLE II, SECTION 6. After the word "the" be added "signature of the President and Permanent Secretary."—[1878, April 18th.]

ARTICLE II, SECTION 4. A license from the Board of Examiners of this society shall also be required of every candidate.—[1878, April 18th.]

Digitized by Google

RESOLUTIONS RELATING TO THE GOVERNMENT OF THE SOCIETY.

Resolved, That a committee of three be appointed by the Chair, to secure the passage of an amendment to the laws organizing the State Board of Health, to enforce the registration of deaths, births, etc., to enable the Board of Health to secure more complete statistics in relation thereto.—[1870, Oct. 20th.]

Resolved, That a committee be appointed by the Chair, to present to this society, at its next meeting, any amendment which may be advisable, in their judgment, to the present law regulating the registration of births and deaths.—[1870, Oct. 20th.]

Resolved, That the fact of a doctor of medicine being engaged in the manufacture and sale of any secret or patent medicine, or in any way promoting the use of them, shall render him ineligible as a member of this society.—[1871, Oct. 12th.]

Resolved, As a sense of this society, that the subject of medical ethics should receive a larger share of attention in medical universities and colleges of the country, to the end that the true principles inculcated therein may be more thoroughly impressed upon the minds of the students, and, in consequence, more faithfully and scrupulously observed by them in their subsequent professional career.—[1871, Oct. 12th.]

Resolved, That the Board of Censors shall recommend no candidate for membership until he shall have presented his diploma or other evidence of being a graduate of a recognized school, and of good standing; and that no voucher

Digitized by Google

of a single member shall be considered sufficient evidence of his qualifications.—[1871, Oct. 12th.]

The Secretary was instructed to notify the committees of their appointment as soon as made by the President; also, that the Chairman of each committee be requested to notify each member of said committee of his appointment.—[1872, Oct. 10th.]

Resolved, That the Committee on Revision of the Constitution and By-Laws be instructed to introduce into the code a law requiring the reading of the minutes of each session at the conclusion of the same.—[1873, Oct. 10th.]

Resolved, That a Permanent Secretary be elected for the society, who shall be paid for his services, and that an additional Assistant Secretary shall be appointed each year by the President at the place of the future meeting. The salary of the Permanent Secretary to be fixed by the vote of the society.—[1873, Oct. 10th.]

Resolved, That the Permanent Secretary be allowed a salary of one hundred dollars.—[1874, April 10th.]

Resolved, That the Chairman of the various Standing Committees hereafter present a synopsis of their several reports; the reading of which will be considered as fulfilling the provisions of the Constitution.—[1874, April 10th.]

Resolved, That the Publishing Committee be instructed to make out an alphabetical list of the members, together with their places of residence, for the society, and have the same published in the next volume of transactions.—[1874, April 10th.]

Resolved, That the President and Secretary be authorized to issue credentials to any member of this society who desires to attend the meeting of the American Medical Association as a delegate.—[1874, April 10th.]

Resolved, That the Secretary be authorized to issue credentials to any member of the society desirous of visiting any foreign medical association.—[1874, April 10th.]

Digitized by Google

Resolved, That this society recognizes the diplomas of the Toland College, and places its graduates who are now members of this society, or who may hereafter apply for membership, on the same footing as the graduates of other regular schools —[1875, April 21st.]

Resolved, That the original founders of the society are permanent members and liable to yearly dues, and that all members once admitted are liable to yearly dues, whether simply as a delegate or otherwise.—[1875, April 21st.]

Resolved, That a committee of five members be appointed for the purpose of promoting the organization of county or district societies.—[1875, April 21st.]

Resolved, That the San Francisco Medical Benevolent Society be, and the same is hereby recognized as a local medical society within the meaning of the Constitution of the State Medical Society, which requires its members to belong to a local medical society, when there is one where they reside.—[1875, April 19th.]

On motion it was ordered that the actual expenses incurred by the Board of Examiners be paid by the Treasurer of the society.—[1875, April 19th.]

Resolved, That this society indorse the views of the President as to the importance of the creation of local Boards of Health in every incorporated city and town in the State; and recommend the invocation of legislative aid in the promotion of so desirable an object.—[1877, April 18th.]

Resolved, That the practice of making annual contracts with individuals or societies for medical attendance is not only derogatory to the dignity of the profession, but is an actual violation of the code of medical ethics adopted by the American Medical Association, as well as the code adopted by this society.—[1877, April 18th.]

Resolved further, That the name of any member of this association who shall hereafter make or renew a contract

Digitized by Google

for annual medical attendance upon individuals or societies shall be stricken from the roll of the same.—[1877, April 18th.]

It was ordered that the actual expenses incurred by the Board of Examiners of this society be paid by the Treasurer of the society; who shall also pay such expenses of litigation as may be deemed necessary and expedient in order to carry out the objects of the law under which they were elected.—[1877, April 18th.]

Resolved, That the Publication Committee be requested to insert in the proceedings, in a collective form, all the changes in the Constitution, and the resolutions relating to the government of the society, which have been adopted from time to time.—[1878, April 17th.]

Resolved, That the several local medical societies and Boards of Health throughout the State be requested to urge their respective city, county, and town authorities to establish ordinances or laws requiring all practitioners of medicine within the limits of their respective jurisdictions to report in writing to their respective Boards of Health, all cases of the more dangerous epidemic diseases coming under their professional observation.—[1878, April 17th.]

Resolved, That the Secretary of the Board of Examiners be instructed to communicate with the local medical societies, and urge that they prosecute violations of the medical law, and that they report progress from time to time to the Board of Examiners.—[1878, April 17th.]

Resolved, That this society appeal to all ministers of the gospel throughout the State, and urge them to use their influence in all proper and available ways to discourage the inhuman, degrading, and extensively prevailing practice of feticide.—[1878, April 17th.]

Digitized by Google

STANDING COMMITTEES
OF THE STATE MEDICAL SOCIETY FOR 1878-79.

ON PRACTICAL MEDICINE—H. Gibbons, Sr., San Francisco; G. W. Davis, Chico; W. S. Thorne, San Jose; W. A. Russell, Visalia; Henry Worthington, Los Angeles.

ON SURGERY—E. H. Woolsey, Oakland; A. B. Nixon, Sacramento; E. B. Robertson, San Andreas; E. L. Parrimore, Woodland; E. J. Pelham, San Quentin.

ON OBSTETRICS—F. W. Todd, Stockton; B. D. Dean, San Francisco; B. F. Hardy, San Francisco; T. A. Snider, Sacramento; C. Cushing, Oakland.

ON HISTOLOGY AND MICROSCOPY—J. H. Wythe, Oakland; H. D. Robertson, Santa Clara; L. R. Webster, Grass Valley; P. B. McD. Miller, Oroville; J. M. Willey, San Francisco.

ON PUBLIC HYGIENE AND STATE MEDICINE—F. W. Hatch, Sr., Sacramento; J. L. Meares, San Francisco; A. B. Mehring, Visalia; O. Harvey, Galt; M. M. Chipman, Santa Clara.

ON MEDICAL TOPOGRAPHY, ENDEMICS, ETC.—H. Neal, Hollister; H. J. Crumpton, Lakeport; J. T. Wells, Bakersfield; W. A. Washington, Merced; C. M. Fenn, San Diego.

ON INDIGENOUS BOTANY—W. P. Gibbons, Alameda; A. S. Dubois, San Leandro; M. Pietrzycki, Rio Vista; N. Williams, Richland; A. Fine, Watsonville.

ON MENTAL DISEASES—A. B. Stout, San Francisco; E. T. Wilkins, Napa; G. J. Van Vlack, San Francisco; A. H. Agard, Oakland; I. S. Titus, San Francisco.

Digitized by Google

ON MEDICAL EDUCATION—C. N. Ellinwood, San Francisco; J. T. Crook, San Francisco; S. Holmes, Santa Cruz; W. T. Bell, Winters; A. H. Cochrane, San Jose.

ON PRIZE ESSAYS—H. H. Toland, San Francisco; B. Cory, San Jose; G. H. Powers, San Francisco; W. C. Jones, Grass Valley; S. J. S. Rogers, Marysville.

ON ARRANGEMENTS—R. B. Cole, San Francisco; James Simpson, San Francisco; J. L. Meares, San Francisco; A. M. Wilder, San Francisco; W. T. Wythe, Jr., San Francisco.

ON PUBLICATION—G. G. Tyrrell, Sacramento; F. W. Hatch, Sacramento; T. A. Snider, Sacramento; W. R. Cluness, Sacramento; H. W. Nelson, Sacramento.

SPECIAL COMMITTEES.

ON GYNÆCOLOGY—John Scott, San Francisco; M. S. McMahon, San Jose; Asa Clark, Stockton; W. R. Cluness, Sacramento; C. B. Bates, Santa Barbara.

ON OPHTHALMOLOGY—A. Barker, San Francisco; A. P. Whittell, Sacramento; A. M. Wilder, San Francisco; N. J. Martinache, San Francisco; J. S. Adams, Oakland.

ON DISEASES OF WOMEN AND CHILDREN—L. E. Wanzer, San Francisco; E. A. V. Brownell, Los Angeles; C. Blake Brown, San Francisco; C. A. Buckel, San Francisco; E. Grisselle, San Francisco.

ON NECROLOGY—H. A. DuBois, San Rafael; George Hewston, San Francisco; H. N. Rucker, Merced; M. W. Fish, Oakland; A. Jump, Downieville.

Digitized by Google

CATALOGUE OF OFFICERS AND MEMBERS

OF

THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA.

PRESIDENTS AND VICE PRESIDENTS OF THE STATE MEDICAL SOCIETY.

1856.

SACRAMENTO.

President,

B. F. Keene.....El Dorado.

Vice Presidents,

E. S. Cooper .....San Francisco.
S. Langdon..... .....San Joaquin.
D. W. C. Rice.....Yuba.
R. K. Reid.....San Joaquin.
F. W. Hatch.....Sacramento.

1857.

SACRAMENTO.

President,

H. Gibbons.....San Francisco.

Vice Presidents,

R. H. McDaniels.....Yuba.
O. Harvey.....El Dorado.
A. J. Spencer.....Santa Clara.
R. B. Ellis.....Sacramento.
A. B. Stout..... .....San Francisco.

Digitized by Google

1858.

SAN FRANCISCO.

President,

A. B. Stout.....San Francisco.

Vice Presidents,

J. P. Whitney.....San Francisco.
C. N. Ege.....Yuba.
A. J. Spencer.....San Jose.
I. E. Oatman .....Sacramento.
J. Morrison.....San Francisco.

1859.

SACRAMENTO.

President,

R. B. Ellis.....San Francisco.

Vice Presidents,

J. F. McLane.....Yuba.
H. W. Harkness.....Sacramento.
O. Harvey.....El Dorado.
W. G. Deal.....Alameda.
J. F. Montgomery.....Sacramento.

1860.

President,

Isaac Rowell.....San Francisco.

Vice Presidents,

Isaac S. Titus.....El Dorado.
C. A. Kirkpatrick.....Solano.
R. B. Cole.....San Francisco.
Ira E. Oatman.....Sacramento.

Corresponding Secretary,

*E. S. Cooper.....San Francisco.

* Dr. Cooper was also elected one of the Vice Presidents, but declined—preferring the position of Corresponding Secretary.

Digitized by Google

Recording Secretaries,

G. Taylor.....Sacramento.
G. L. Simmons.....Sacramento.

Treasurer,

H. W. Harkness.....Sacramento.

1861.

President,

Samuel F. Hamm.....El Dorado.

Vice Presidents,

B. H. Pierson.....Sacramento.
G. L. Simmons.....Sacramento.
C. A. Kirkpatrick.....Solano.
B. A. Sheldon .....San Francisco.
J. G. Tucker.....San Francisco.

Corresponding Secretary,

E. S. Cooper .....San Francisco.

Recording Secretaries,

G. Taylor.....Sacramento.
Isaac S. Titus.....El Dorado.

Treasurer,

H. W. Harkness.....Sacramento.

1870.

SAN FRANCISCO.

[Reorganization of State Medical Society.]

President,

T. M. Logan.....Sacramento.

Vice Presidents,

S. R. Harris.....San Francisco.
T. H. Pinkerton.....Alameda.
J. L. Ord.....Santa Barbara.
G. A. Shurtleff.....San Joaquin.
D. B. Hoffman .....San Diego.

Digitized by Google

1871.

SACRAMENTO.

President,

H. Gibbons, Sr.....San Francisco.

Vice Presidents,

G. A. Shurtleff.....San Joaquin.
F. W. Hatch.....Sacramento.
F. W. Todd.....San Joaquin.
J. F. Montgomery.....Sacramento.

1872.

OAKLAND.

President,

G. A. Shurtleff.....San Joaquin.

Vice Presidents,

T. H. Pinkerton.....Alameda.
J. J. Franklin.....Sonora.
W. F. Cheney.....Butte.
W. F. Hays.....San Luis Obispo.

1873.

SACRAMENTO.

President,

T. H. Pinkerton.....Alameda.

Vice Presidents,

J. M. Brown.....Solano.
C. A. Kirkpatrick.....San Mateo.
F. W. Hatch.....Sacramento.
H. M. Briggs.....Santa Barbara.

Permanent Secretary,

G. G. Tyrrell.....Sacramento.

Digitized by Google

1874-5.

SAN FRANCISCO.

President,

J. M. Brown, U. S. N .....Solano.

Vice Presidents,

A. B. Nixon.....Sacramento.
W. F. Cheney.....Butte.
Martin Baker.....Tulare.
R. K. Reid.....San Joaquin.

Permanent Secretary,

G. G. Tyrrell.....Sacramento.

1875-6.

SAN FRANCISCO.

President,

A. B. Nixon.....Sacramento.

Vice Presidents,

W. F. Cheney.....Butte.
H. H. Toland.....San Francisco.
W. R. Cluness.....Sacramento.
H. S. Orme.....Los Angeles.

Permanent Secretary,

G. G. Tyrrell.....Sacramento.

1876-7.

SAN FRANCISCO.

President,

Wm. Fitch Cheney .....Chico.

Digitized by Google

Vice Presidents,

B. D. Dean.....San Francisco.
N. S. Hamlin.....Yuba City.
M. B. Pond.....Napa.
F. W. Todd.....Stockton.

Permanent Secretary,

G. G. Tyrrell.....Sacramento.

1877-8.

SAN JOSE.

President,

Washington Ayer.....San Francisco.

Vice Presidents,

L. C. Lane.....San Francisco.
A. W. Saxe.....Santa Clara.
J. M. Briceland.....Shasta.
Thomas Ross.....Woodland.

Permanent Secretary,

G. G. Tyrrell.....Sacramento.

1878-9.

SAN FRANCISCO.

President,

H. S. Orme.....Los Angeles.

Vice Presidents,

A. W. Saxe.....Santa Clara.
J. M. Briceland.....Shasta.
James Simpson.....San Francisco.
G. L. Simmons.....Sacramento.

Permanent Secretary,

G. G. Tyrrell.....Sacramento.

Digitized by Google

Assistant Secretaries,

F. W. Hatch, Jr.....Sacramento.
Thomas Ross.....Woodland.

Treasurer,

I. E. Oatman.....Sacramento.

Board of Censors,

H. Gibbons, Sr.....San Francisco.
Q. C. Smith.....Cloverdale.
B. D. Dean.....San Francisco.
R. A. McLean.....San Francisco.
W. A. Grover.....San Francisco.
C. A. Kirkpatrick.....Redwood City.

State Board of Examiners,

R. Beverly Cole.....San Francisco.
H. Gibbons, Jr.....San Francisco.
C. M. Bates.....San Francisco.
H. P. Babcock.....Oakland.
J. B. Cox.....San Jose.
Luke Robinson.....Colusa.
J. F. Montgomery.....Sacramento.

Alternates,

G. A. Shurtleff.....Stockton.
G. W. Davis.....Chico.
S. Holmes.....Santa Cruz.

Digitized by Google

ORDINARY MEMBERS.

[Those who have an obelisk (†) prefixed to their names are dead.]

Adams, J. S.....Oakland.
Agard, A. H.....Oakland.
Aiken, G. H.....San Francisco.
Allen, C. H.....Centreville.
Andrei, A.....San Francisco.
Anthony, A. G.....Oakland.
Auerbach, J. J.....San Francisco.
Ayer, W.....San Francisco.
Babcock, H. P.....Oakland.
Bak, H.....San Francisco.
Baker, Martin.....Visalia.
Baldwin, H. S.....San Francisco.
Baldwin, W. H.....Sacramento.
Bamford, William.....East Oakland.
Barber, E. T.....Oakland.
Bard, C. L.....S. Buenaventura.
Barkan, A.....San Francisco.
Bates, C. B.....Santa Barbara.
Bates, C. M.....San Francisco.
Becker, A. R.....San Francisco.
Belinge, F. A. A.....San Francisco.
Bell, W. T.....Winters.
Belton, W. H.....Colusa.
Biggs, F. B.....San Francisco.
Blake, E. C.....San Francisco.
Bradbury, W. T.....San Francisco.
Briceland, J. M.....Shasta.
Briggs, H. H.....Sacramento.
Brigham, C. B.....San Francisco.
Brinkerhoff, S. B.....Santa Barbara.

Digitized by Google

Brown, S. E.....San Jose.
Brown, C. Blake.....San Francisco.
Brown, J. M., U. S. N.....Mare Island.
†Brown, James A.....Sutter Creek.
Brownell, E. A. V.....Los Angeles.
Bruner, W. H.....San Francisco.
Buckel, C. Annette.....Oakland.
Bucknall, G. J.....San Francisco.
Bucknell, M. E.....San Francisco.
Burdick, J. L.....Oakland.
Burgess, O. O.....San Francisco.
Caldwell, A. B.....Marysville.
†Caldwell, A. B.....Santa Clara.
Caldwell, Robert.....San Jose.
Callandreau, J.....San Francisco.
†Campbell, S. D.....Suisun.
Carothers, J. H.....Martinez.
Carr, E. S.....Oakland.
†Chamberlin, P.....San Francisco.
†Chase, George C.....Downieville.
Cheney, William Fitch.....Chico.
Chesley, C. P.....San Francisco.
Chipman, M. M.....San Jose.
Chismore, George.....San Francisco.
Christie, J. B.....Petaluma.
Clark, Asa.....Stockton.
Clark, J. H.....Leesville.
Clark, B. F.....Chico.
Cluness, W. R.....Sacramento.
Cochrane, A. H.....San Jose.
Cole, R. Beverly.....San Francisco.
Coleman, C. S.....San Leandro.
Colman, F. W.....Napa.
Cory, Benjamin.....San Jose.
Cox, J. B.....San Jose.
Crane, J. H.....Petaluma.
Crook, John T.....San Francisco.
Crumpton, H. J.....Lakeport.

Digitized by Google

Curless, Wm.....Truckee.
†Curtis, E. M.....Sacramento.
Cushing, Clinton.....Oakland.
Davis, G. W.....Chico.
Dawson, J. A.....Chico.
Dean, Benjamin D.....San Francisco.
Delmont, F.....Ventura.
Dennis, S. W.....San Francisco.
Deuel, S. A.....Sacramento.
Dozier, Franklin L.....Napa.
Dubois, A. S.....San Leandro.
DuBois, H. A.....San Rafael.
Durant, F. C.....Folsom.
Dutton, G. W.....Tomales.
Ellinwood, C. N.....San Francisco.
Evans, George H.....Dixon.
Farley, C. K.....Gilroy.
Farrar, M. E.....Yagersville.
Fenn, C. M.....San Diego.
Ferrer, H.....San Francisco.
Fine, A.....Watsonville.
Fish, M. W.....Oakland.
Fisher, Charles.....Sacramento.
Fiske, Henry M.....San Francisco.
Flint, Joseph.....Tehama.
Follingsbee, E. A.....San Francisco.
Foote, Erastus N.....Lockford.
Foulkes, J. F.....Oakland.
†Franklin, J. J.....Sonora.
Freeman, G. M.....Visalia.
Gardner, Mathew.....Davisville.
Gates, H. S.....San Francisco.
Gibbons, Henry.....San Francisco.
Gibbons, Henry, Jr.....San Francisco.
Gibbons, William P.....Alameda.
Goodspeed, J. R.....San Mateo.
Gordon, E. A.....Dixon.
Gordon, J. B.....Santa Rosa.

Digitized by Google

Grannis, M. M.....Visalia.
Green, T .....San Francisco.
Grisselle, Eliza.....San Francisco.
Grover, W. A.....San Francisco.
Hamlin, N. S.....Yuba City.
Hanson, Thomas C.....Winnemucca.
Hardy, B. F.....San Francisco.
Harris, E. B.....Virginia City.
Harrington, C. C.....Marysville.
Harvey, O.....Galt.
†Harville, J. W .....San Francisco.
Hatch, F. W.....Sacramento.
Hatch, F. W., Jr.....Sacramento.
Hays, W. W.....San Luis Obispo.
Herz, C.....San Francisco.
Hewston, George.....San Francisco.
Hodgdon, W. H. A .....San Francisco.
Holmes, Stillman.....Santa Cruz.
Howe, A. J.....Los Angeles.
Hudson, A. S.....Stockton.
Hunt, R.....Nevada City.
Jackson, G. H.....Woodland.
Jackson, J. S.....Modesta.
Jenkins, T. J.....San Jose.
Jones, William C.....Grass Valley.
Jump, Alemby.....Downieville.
Keane, G. B.....San Francisco.
Kelly, Thomas.....Santa Clara.
Kenyon, C. G .....San Francisco.
Kesseler, A.....Volcano.
Kier, H. M.....Knight's Land'g.
Kirkpatrick, C. A.....Redwood City.
Lampson, R. M.....Chinese Camp.
Lane, L. C.....San Francisco.
Langdon, S.....Stockton.
†Lasvignes, L.....Forest City.
†Logan, Thomas M .....Sacramento.
Lovelace, L. M.....Le Moore.

Digitized by Google

Lusson, P. M.....San Jose.
Mackintosh, Robert.....San Francisco.
Markell, R. S.....Cacheville.
Martinache, N. J.....San Francisco.
Martineaut, E. D.....San Francisco.
McLean, R. A.....San Francisco.
McMahan, M. S.....San Jose.
McMahan, Juo. B.....San Jose.
McNutt, W. F.....San Francisco.
Mead, E. S.....San Jose.
Meares, J. L.....San Francisco.
Mehring, A. B.....Visalia.
Miller, P. B. McD.....Oroville.
†Millington, John.....San Francisco.
Montgomery, J. F.....Sacramento.
†Morse, John F.....San Francisco.
Murphy, James.....San Francisco.
Murphy, R. W.....San Francisco.
Mussey, J. M.....La Porte.
Neal, H.....Hollister.
Nelson, H. W.....Sacramento.
Newmark, V.....Benicia.
Nichell, C. F. A.....Napa.
Nichols, H. L.....San Francisco.
Nixon, A. B.....Sacramento.
Oatman, Ira E.....Sacramento.
O'Neil, A. A.....San Francisco.
Orme, H. S.....Los Angeles.
Pardee, E. H.....Oakland.
Parkinson, M. C.....Antioch.
Parramore, E. L.....Woodland.
Paugh, W. J.....San Francisco.
Pawlicki, L.....San Francisco.
Payne, F. H.....Berkeley.
Pelham, E. J.....San Quentin.
Pietrzycki, M.....Rio Vista.
Pike, H. G.....Sanel.
Pinkerton, T. H.....Oakland.

Digitized by Google

Plummer, R. H.....San Francisco.
Powell, D.....Marysville.
Powers, G. H.....San Francisco.
Pond, M. B.....Napa.
Pratt, A. H.....Dixon.
Regensberger, A. E.....San Francisco.
Reid, R. K.....Stockton.
Reilay, John P.....Oakland.
Robertson, E. B.....San Andreas.
Robertson, H. D.....Oakland.
Robinson, Luke.....Colusa.
Rodgers, L. O.....San Francisco.
Rogers, S. J. S.....Marysville.
Rogers, Geo. H.....San Francisco.
Ross, Thomas.....Woodland.
Rowell, Charles.....San Francisco.
Rucker, Hiram N.....Merced.
Rupe, S. H.....Healdsburg.
Russell, W. A.....Visalia.
†Sage, C. T.....San Francisco.
Saxe, A. W.....Santa Clara.
Scott, J. D.....San Jose.
Scott, John.....San Francisco.
Shafter, J. C.....Olema.
Shurtleff, Benjamin.....Napa.
Shurtleff, G. A.....Stockton.
Simmons, G. L.....Sacramento.
Simonton, W. B.....Oakland.
Simpson, James.....San Francisco.
Smith, L. E.....La Porte.
Smith, W. F.....San Francisco.
Smith, Q. C.....Cloverdale.
Snider, T. A.....Sacramento.
Spillane, James.....San Francisco.
Sprague, R. W.....San Francisco.
†Sproule, Samuel F.....Chico.

Digitized by Google

Stivers, C. A.....San Francisco.
Stone, E. P.....Oakland.
Stout, A. B.....San Francisco.
Strong, A.....Woodland.
Sullivan, James F.....San Francisco.
Swan, Benj. R.....San Francisco.
†Thorndyke, A.....Stockton.
Thorne, W. S.....San Jose.
Tibbitts, S. M.....San Francisco.
†Tilden, T. W.....Chico.
Titus, I. S.....San Francisco.
Todd, T. M.....Auburn.
Todd, F. W.....Stockton.
Toland, H. H.....San Francisco.
Tooly, L. P.....Colusa.
Tonner, J. A.....San Francisco.
Trembly, J. B.....Oakland.
Twitchell, W. L.....San Francisco.
Tyrrell, G. G.....Sacramento.
Van Vlack, G. J.....San Francisco.
†Van Wyck, John C.....Oakland.
Wagner, John.....San Francisco.
Wanzer, L. M. F.....San Francisco.
Washington, W. A.....Merced.
Wayland, James F.....Chico.
†Wayman, W. G.....San Francisco.
Webster, L. R.....Grass Valley.
Wells, J. T.....Bakersfield.
Wells, W. H.....Dixon.
Wemple, E. L.....Antioch.
Wheeler, P.....Oakland.
White, G. A.....Sacramento.
Whittell, A. P.....Sacramento.
Wilder, A. M.....San Francisco.
Wilkins, E. T.....Napa.
Willey, John M.....San Francisco.
Williams, N.....Richland.

Digitized by Google

Woolsey, E. H.....Oakland.
Worthington, H.....Los Angeles.
Wythe, W. T.....San Francisco.
Younger, W. J.....San Francisco.

HONORARY MEMBERS.

Joseph Hyrtle.....Vienna, Austria.
Charles A. Cameron.....Dublin, Ireland.
†Professor Louis Agassiz.....Massachusetts.
S. W. Thayer.....Vermont.
J. H. Wythe.....Oakland, Cal.
John Le Conte.....Oakland, Cal.
Joseph Le Conte.....Oakland, Cal.
A. Ames.....Boston, Mass.
P. Landsdale.....United States Navy.
David Kindleberger.....United States Navy.
W. E. Taylor.....United States Navy.
S. F. Shaw.....United States Navy.
W. M. Nickerson.....United States Navy.
C. McCormick.....United States Army.
R. Murray.....United States Army.
C. C. Keeney.....United States Army.
E. Bently.....United States Army.
F. Tallon.....United States Army.

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

COUNTWAY LIBRARY
HC 4HD1 L

2 Ga 1316

Digitized by Google